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RECTAL BLEEDING

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MERCURIAL DIURETICS

DIVERTICULITIS

ERYTHROMYCIN OINTMENT

RHEUMATIC FEVER

MYOCARDIAL INFARCTION

ALLERGY

MEASLES ENCEPHALOMYELITIS

MICROCOCIC ENTERITIS

RUPTURE OF ESOPHAGUS

CONGESTIVE HEART FAILURE

OBSCURE FEVER

TREATMENT OF GOUT

DENTOALVEOLAR ABSCESS

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LOW SODIUM DIET

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VOLUME 61

NUMBER 4

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*Zelman, S.: Arch. Int. Med. 90:141, 1952.

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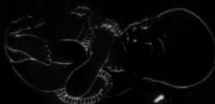
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1. Gitman, L., and Kaplowitz A.: Use of diethylstilbestrol in complications of pregnancy. New York State J. Med. 50:2823: 1950.
2. Ross, J.S.: Use of diethylstilbestrol in the treatment of threatened abortion. N. Nat. M.A. 43:20, 1951.
3. Karnaky, K.J.: Am. J. Obst. & Gynec. 58:622. 1949.

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Management of the Ambulatory Diabetic Patient

Some middle-aged patients have the characteristics of juvenile patients in that the blood sugar is labile

JAMES M. NORTINGTON, M.D., *Editor*

For several months I have had it in mind to write an editorial contradicting the almost universal teaching that every newly-discovered diabetic should be put in the hospital. Recently 2 Boston physicians¹ have written an article on this subject which I use with little change.

A person with newly discovered diabetes who is told that hospitalization is necessary becomes unduly alarmed about the gravity of his disease. If regulated in the hospital, the regimen often requires major adjustments when he resumes normal activity at home.

The diagnosis should be made within the first two visits. In all cases of suspected diabetes, a test for blood sugar should be made at

the first visit; 2 or 3 hours after a meal is preferable to a fasting specimen and is often diagnostic. When the initial blood sugar level does not conclusively indicate diabetes a second specimen is taken 2 hours after a meal high in carbohydrate (50 to 100 gm.) on the second visit. Further study is only rarely necessary to establish or to exclude the diagnosis.

The glucose-tolerance test remains the only satisfactory method for this purpose. The standard oral technic consists of the administration of 100 gm. of glucose to the fasting patient, who has been on a full, unrestricted diet, including sweets, for 2 or 3 days before the test. Fasting, 1-hour, 2-hour and 3-hour specimens of blood and urine are collected. A definite diagnosis of diabetes

¹ J. W. Runyan, Jr. & David Hurwitz, *New England J of Med.* 250:361, Mar. 4, 1954.

is made in patients whose blood sugar is high at 2 hours and does not fall below 120 mg. per 100 c.c. by the Folin-Wu method or 100 c.c. by the Somogyi-Nelson method at the end of 3 hrs.

Dietetic training and instruction in the use of insulin can readily be given by the doctor in his office. Diet should conform as closely as possible to normal requirements and eating habits. The use of special foods, such as gluten bread and diabetic desserts, is not advised. The Meal Planning Booklet* is of great help to the physician and patient in planning diets. Instruction to the patient in the use of the meal-planning booklet is essential and to review the diet with the patient from time to time and to make any necessary adjustments.

INSULIN THERAPY

In general, all patients with frank symptoms of diabetes should immediately be started on insulin. Usually within 24 hours of the first injection, thirst, polyuria and nocturia will have abated. It is better for the patient to be told that the amount of insulin needed may later be decreased or even omitted than to find it necessary to begin insulin after failure with diet alone. The initial injection may be given at any time during the day, but subsequently the insulin should be administered at the same time each day—just before breakfast. Insulin given at other times during the day is to be avoided if possible.

NPH insulin has largely replaced PZ insulin. The action begins within 4 or 5 h. and reaches its peak in 8 to 10 h.—lasts for 20 to 24 h. After the decision is made that insulin is necessary, it should be given immediately. The patient is instructed to hold the syringe, which is loaded

with insulin, as if it were a pencil. The skin of the leg is prepared with alcohol and held taut by the physician, and, while he steadies the patient's hand, the needle is inserted perpendicularly to its hilt. After the needle has penetrated the surface of the skin, it is, of course, painless, and this should be pointed out. The patient is then told to push the plunger down and is allowed to pull out the needle. He may then be instructed in the sterilization of the equipment, the withdrawing of insulin from the bottle, and so forth. The insulin is given deep by means of a 1-cm. No. 26 needle.

Frequent urine testing for sugar by the patient (usually 3 or 4 times daily on specimens excreted before meals) is advised while the disease is being controlled. The patient keeping a written record of the tests. Instruction in the proper care of the feet is important. Epidermophytosis usually responds to any undecylenic acid preparation.

Check daily for a few days the diet and insulin administration, regulation usually requires 1 to 3 weeks. Keep the urine taken before meals as nearly sugar-free as possible without provoking hypoglycemia. In the labile form control is more difficult, and the patient may have hypoglycemic reactions. The urine of the elderly diabetic on insulin should not be kept absolutely free of glucose. The obese patient the diabetes is usually stable, and insulin reactions and acidosis seldom occur.

SUITABLE DIET

By prescribing a reasonable diet and maintaining an interest in the patient and his problems, one can accomplish all necessary weight reduction.

Started on 10 to 20 units of NPH insulin, increase 5 to 10 units every 2 to 7 days until control is adequate.

* Copies may be obtained at low cost from Health Publications Institute, Raleigh, N. C.

If weight is reduced insulin can often be discontinued after several months. In the asymptomatic obese patient, in spite of an initial high blood sugar level, insulin is usually unnecessary if significant weight reduction takes place. A few middle-aged patients of normal weight have the characteristics of the juvenile patient in that the blood sugar is labile.

The patient with symptoms is started on 15 to 20 units of NPH insulin, increased 5 to 10 units every 2 to 4 days until controlled. Since it is usually not advisable to reduce the food intake in these cases, it is preferable to begin with a small dose of insulin, even when the patient is asymptomatic, if there is moderate glycosuria and blood sugar levels are elevated.

The diet is regulated to maintain food intake and to prevent gains or losses in weight. The diet prescribed is based on, and should approximate, previous food intake — 1500 to 2200 calories usually, but 2600 calories are occasionally necessary. Adjustments in the diet must be made from time to time.

LONG ACTING INSULIN

The elderly patient has mild diabetes and the regimen is planned on an individual basis; if definite symptoms, a small dose (10 to 15 units) of NPH insulin should be given initially — may be necessary to increase dosage at intervals to decrease glycosuria. If an elderly patient continues to show a large amount of glycosuria and persistently high blood sugar levels, but denies symptoms, a small dose of long-acting insulin should be started. Insulin can frequently be stopped after a few months.

It is in the elderly patients that high blood sugar levels, with minimal or no glycosuria often occur. The ambulatory patient exhibiting

such findings is usually asymptomatic. It is believed that insulin therapy is not indicated in such cases, unless glycosuria or infection intervenes. Alterations in the patient's eating habits should, as a rule, be minimal, provided the food intake has been well balanced in the past.

In becoming acquainted with the juvenile patient, one should stress the fact that he may continue to participate in sports and other activities as in the past. The day-to-day care of the diabetes is shared by mother and patient as much, as his maturity warrants the patient himself being responsible for daily administration unless he is ill. The disease in these cases is labile, and insulin is invariably required even in the rare case without symptoms. The caloric needs of the growing patient must be met, and this is not possible without insulin.

It is justifiable to begin therapy without the blood sugar report when there is clear clinical evidence of diabetes, together with a strongly positive urine test for sugar. Delay may permit acidosis to develop. Blood sugar level is not usually a gauge to the initial insulin dosage required. When there are frank symptoms of diabetes (but not diabetic acidosis), which are usually present in juvenile patients, the initial dose may be 20 to 30 units of NPH insulin if the child is 10 years of age or older. (Younger children smaller doses.) Adjust daily by frequent visits to the physician until adequate control; increase 5 to 10 units every 1 to 3 days unless acetone and continual 4-plus sugar in the urine.

JUVENILE THERAPY

The majority of juveniles can be controlled with a single dose of NPH insulin before breakfast, some need additional *regular* insulin. This can be added directly to the NPH in the

mornings to control late-morning glycosuria. Occasionally, regular or NPH insulin is necessary at other times during the day. Rarely, control may be more satisfactorily obtained with combinations of PZ and regular insulin than with NPH insulin.

Modifications in eating are usually necessary. Intake of calories should be sufficient, so that the patient never feels very hungry and that there is a steady weight gain. Less than 2200 calories seldom serve, 2600 to 3400 calories are frequently

necessary — carbohydrate, protein and fat as in a well-balanced diet. Concentrated sweets should be avoided. If the patient is unwilling to accept denial, as indicated by repeated indulgence, it is better to work a given amount into the diet each day rather than to allow the point to become an issue. Routinely, juvenile patients taking NPH insulin receive 3 meals a day in addition to an afternoon (2 to 3) and an evening (8:30 to 10) feeding. A mid-morning feeding if late-morning reactions develop.



Carcinoma of the Right Colon

The right colon is that part of the large intestine that lies proximal to the mid point of the transverse colon; it differs from the left in that its lumen is larger and its fecal contents are usually fluid. Lesions in the right colon usually project from the wall into the lumen as hard plateau-like elevations, or are polypoid. Lesions of the left colon are scirrhus invasions of the intestinal wall producing constricting lesions. Because of these factors—the size of the lumen, the nature of the fecal contents and the character of growth—symptoms produced by cancer in these two parts of the colon also differ.

Carcinoma of the left colon more often produces obstruction early and the patient complains of distention, constipation and passage of ribbon-like stools with some blood and mucus. Carcinoma of the right colon seldom produces obstruction; the patient usually complains of vague GI disturbances referable to the right side of the abdomen which the physician may attribute to chronic

gallbladder disease or appendicitis. Sometimes symptoms of anemia, such as extreme weakness, first bring these patients to a physician and this anemia may be very severe early in the disease due to the chronic seepage of blood from the polypoid lesion, or due to some poorly understood mechanism which prevents adequate absorption of iron and folic acid from the intestinal tract. Occasionally carcinoma of the right colon will produce no symptoms and is found accidentally when a patient is examined for another purpose.

We find that 60% of our cases have vague symptoms usually associated with lesions of the upper GI tract rather than with the colon; 30% of the cases come to the physician because of weakness due to an anemia which is not associated with any visible blood loss. In 10% of the cases a tumor mass is discovered accidentally which has produced no symptoms.

T. D. Davis & S. W. Budd, Jr., *Virginia Med. Monthly*, 81: 56, 1954.

CASE REPORT

Case Reports from Davis Hospital

Statesville, North Carolina

CASE NO. I

A housewife, 36, the mother of three children, the youngest 11, was admitted to Davis Hospital suffering from severe pain in the region of the stomach and gallbladder. She had been having similar attacks for a period of 6 weeks preceding admission. None of these attacks was so severe as the last one. Under treatment, the pain soon subsided and the patient was comfortable.

A careful general examination and x-ray of the gallbladder indicated that the organ was badly diseased. Shortly afterwards the gallbladder was removed and found to be in the state shown by x-ray examination.

The patient had no further trouble until 10 years later, when she suffered such persistent and severe pain in the right upper quadrant of the abdomen that she was readmitted. These pains began two weeks prior to admission and had recurred at irregular periods of time. The attacks came on suddenly, were fairly severe at first and lasted about two hours. Following these

attacks the right upper abdomen became very sore for some hours, sometimes a day or so. Each attack was relieved by hypodermic medication given by the family physician. Between attacks the patient was apparently well and all right. At times her doctor thought there might be a slight jaundice.

An x-ray examination of the stomach revealed no trouble. A diagnosis of probable stone in the common duct or in the ampulla of Vater was made and operation advised.

After proper preparation the patient was operated upon through a high right-rectus incision. The few adhesions encountered were freed up enough to permit the careful examination of the common duct and the duodenum.

After aspirating bile from the common duct to be sure of the structure, an opening was made and a probe passed down through the duodenum without difficulty. A careful palpation with the probe in position revealed no stone. A small gallbladder scoop was passed down the com-

mon duct and nothing found. The probe was again passed down in the duodenum and using this as a guide, the duodenum was opened longitudinally and on exploration it was found that the papilla of Vater was completely closed. This was carefully dilated and an exploration of the ampulla was made, but no stone was found.

It was evident that the trouble was due to obstruction at the papilla of Vater, which caused bile to be forced back up through the pancreatic duct into the pancreas, causing attacks of acute pancreatitis, which were responsible for the severe pain during these attacks.

Since this dilation the muscle of the papilla of Vater was sufficient to allow the bile to pass freely, the duodenum was closed transversely using every precaution to prevent leakage afterwards. A T-tube was placed in the common duct and brought out through a stab wound to the right of the incision. Before closing a small drain was placed under the common duct and brought out through the stab wound to the right of the incision. The drain was removed in a few days. After a few days the T-tube was clamped off and the bile allowed to flow down through the duct into the duodenum and no further attacks occurred. At the end of two weeks the T-tube was removed.

The patient then made an uneventful recovery. No further attacks of pain occurred and there was no jaundice at any time. A careful check of the icterus index was normal at all times.

While the T-tube remained in position, an injection of radio-opaque material was made and an x-ray picture made to show a good outline of the bile ducts. In none of the x-rays did there appear anything suggestive of a calculus.

This patient has been well since she left the hospital. There has been no stomach trouble, no indigestion and no suggestion of further trouble with the bile duct or pancreas.

CASE NO. 2

A man, 57, was admitted to Davis Hospital with a tentative diagnosis of partial intestinal obstruction. After a careful general examination, blood counts and blood chemistry determinations, a flat plate was made of the abdomen and this showed a typical step-ladder appearance of an intestinal obstruction. A barium enema and x-ray of the colon was made, which showed no trouble with the colon itself.

A diagnosis of partial acute intestinal obstruction was made and an immediate operation advised. At the operation a partial obstruction was found just about the middle of the ileum. This looked very much as if a string had been tied around the intestine, but not sufficiently tight to obstruct entirely. Above this point the intestine was considerably dilated, below the intestines were partially collapsed.

A careful exploration of the abdomen revealed no trouble except the obstruction. The mesentery was examined for enlarged glands and the retroperitoneal spaces carefully palpated, but nothing else was found.

A resection of this constricted area was done and an aseptic lateral anastomosis was made and the incision closed. Pathological examination of the tissue showed a sort of fibrous constriction; no malignant cells. This was evidently one of those unusual cases in which a fibrous band had formed in some way and was causing constriction of the intestinal wall at this point.

Patient made a good recovery and since then has had no further trouble.

Etiology of Rectal Bleeding

*In most instances diagnosis can be made
by taking a complete history and a thorough
digital and proctosigmoidoscopic examination*

MAX P. COWETT, M.D., *New York, New York*

Every general practitioner sees many patients whose only complaint is rectal bleeding. Until a few years ago the doctor was rarely consulted for rectal bleeding unless it was accompanied by pain, discharge, swelling, etc. To patients, and to too many doctors, blood per rectum meant "piles." Since the public has become cancer conscious, as a result of cancer-detection clinics and such, more patients are coming to doctors for diagnosis and treatment of rectal bleeding.

Blood in the stools should suggest to the physician's mind the diagnosis of cancer and steps taken promptly to rule cancer in or out. These steps are a careful history, a digital examination and a proctosigmoidoscopic examination. Too often a patient with rectal bleeding is sent for barium enema and x-ray

examination, this is reported negative and the patient told he has nothing to worry about. Cancer and polyps of the ampulla of the rectum are rarely found on x-ray examination, although they may be felt, or seen on endoscopic examination.

We must first determine, if possible, the site of the bleeding, then the pathological condition.

I like to consider this bleeding accordingly as it affects infants, children or adults, and subdivide accordingly as the cause is general or local.

In infants and children the general causes are melena neonatorum, Henoch's purpura, extensive burns (Curling's ulcer), septic infection of the umbilicus, Meckel's diverticulum, marasmus, malnutrition, epidemic diarrhea and bacillary dysentery. In the latter a percentage as

high as 21.5 in a series of 293 cases of melena has been reported. Forty-six cases occurred in the first decade of life.

BLEEDING IN INFANTS

The most common local causes of rectal bleeding in infants and children are fissure and polyps. Hemorrhoids are very rare in children. Prolapse of the rectum, especially if it has protruded for length of time, may bleed. Trauma as a result of impalement injuries, from injury by enema tips, thermometers or foreign bodies, may cause bleeding. Congenital anomalies which have been corrected, leaving considerable scar tissue often bleed. Thread worms often cause both blood and mucus in stools.

BLEEDING IN ADULTS

In adults the general causes are leukemia, anemia, hemophilia, purpura hemorrhagica, splenomegaly, cirrhosis of the liver, chronic nephritis with uremia, cardiac disease, Weil's malignant jaundice, mesenteric thrombosis, esophageal varices and pancreatic embolism; rarely typhoid fever, dengue, pellagra, yellow fever, cholera, smallpox, scurvy; poisoning by arsenic or Hg.; vicarious menstruation, malaria or tuberculosis; hiatus hernia with a pinching of the gastric mucosa (ulcer).

Local bleeding of traumatic origin may be due to foreign bodies, chicken- or fish-bones, enema tips, large foreign bodies of bizarre kinds, vegetables, bulbs, etc.; fecal impaction with subsequent ulceration; impalement wounds or gun-shot wounds, or pneumatic injuries; fractured pelvis with puncture of the rectum by spicules of bone. One must differentiate between wounds that have entered the peritoneal cavity and those that have not.

Hemorrhage following hemorrhoi-

dectomy or any other rectal operation may be immediate and due to faulty operative technic, or it may occur on the 7th or 8th day due to slipping or sloughing off of ligatures or exposure of a vessel in the granulating wound.

PERIANAL BLEEDING

Perianal bleeding can be caused by condylomata accuminata or latent anal chancre, tuberculosis, chancre, actinomycosis, blastomycosis, cancer, trauma, abscess or fistula.

In fissure-in-ano the bleeding is usually slight, occurring only during the act of defecation, sometimes only noticed on toilet paper. Feces streaked with blood in a line either posteriorly or anteriorly, indicate the site of the lesion.

Infected crypts and inflamed papillae will cause loss of slight amounts of blood.

Mucosal prolapse and true proctocentesis will also produce bleeding. Bleeding in the latter is constant, requiring the wearing of a pad. Proctoscopy in these reveals a thickened and redundant mucous membrane with superficial inflammation and ulceration.

HEMORRHOIDS

The most common source of unaltered blood are hemorrhoids and the bleeding is a result of erosion or ulceration of the vessel wall. The bleeding at first only occurs at defecation, only streaking the stool, but it may spurt out with considerable force, discoloring the bowl. Where there is no protrusion this bleeding stops automatically. Hemorrhoids that protrude may bleed apart from defecation. The presence of bleeding hemorrhoids does not relieve one of the responsibility for a thorough examination. They may be caused by an infiltrating lesion above, which obstructs venous return. I have seen several cases of



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severe hemorrhage (hgb. 6 to 7 and R.B.C. of 2,000,000) resulting from ulcerated hemorrhoids. It is well to rule out hemorrhoids in any case of secondary anemia.

POLYPS

Next to hemorrhoids, polyps are the most frequent cause of bleeding per rectum. Benign adenomatous polyps produce slight bleeding where the surface is ulcerated and especially if the polyp has a pedicle and protrudes within the sphincter mechanism (obscure until you find the polyp). In multiple polyposis the blood is mixed with mucus and pus.

Villous adenoma, which is usually sessile and situated on the posterior or lateral wall of the rectum, may cause severe hemorrhage with mucous discharge. This is considered a low-grade cancer.

CANCER

In early stages of cancer of the rectum, traces of blood are passed intermittently. When ulceration takes place there is usually a continuous serosanguinous discharge. From cancerous lesions of the anus, rectum and rectosigmoid usually the bleeding is bright-red, that from lesions higher up dark tarry. Lesions above the sigmoid at first may only show occult blood, and when this is found one should be careful of its proper assessment. Fall of red cells from 4 to 3 to 2 million in 6 to 8 weeks is ominous. Blood may be obvious or discovered only by chemical determination.

PROCTITIS

Proctitis, specific or nonspecific, may produce bleeding, as a rule slight, since the bleeding points are usually superficial erosions of the rectal mucosa. If perforation occurs, the bleeding is profuse. Chronic hypertrophic proctitis rare-

ly causes bleeding, the atrophic type, frequently. Any enterocolitis that has lasted for considerable length of time may produce blood in stools.

OTHER CAUSES

Amebic, bacillary and chronic ulcerative dysentery all cause bleeding. Lymphopathia venereum, TB and schistosomiasis will cause blood in stools. Factitial or radiation proctitis should be considered when patients are undergoing x-ray or radiation therapy. In endometriosis there is no rectal bleeding unless ulceration has occurred at the rectovaginal septum.

In diverticulitis bleeding is slight and usually associated with pain, mass and low-grade fever; in 30 to 40% bright red blood will be passed.

Stricture of the rectum of whatever origin causes bleeding as a result of ulceration either above or below the stricture. Bleeding as a rule is slight.

Occult blood as a rule is due to lesions high up in the GT tract: esophagus, stomach (ulcer, cancer, varicosities); also from teeth, gums, nasopharynx, lungs, etc. In certain cases of lesions high up blood will be hurried through the intestinal cave so rapidly that it is passed bright red.

CONCLUSION

It is essential that the doctor always keep in mind the possibility of cancer of the GI tract. Rectal bleeding as seen in general practice can be diagnosed in most instances by any doctor who takes time to take a good history, do digitals and thorough proctosigmoidoscopic examination, and get the help of stool bacteriological and x-ray studies. If one is in doubt he should refer the case to a competent proctologist.

Primary and Secondary Varices

Treatment of the varicose complex consists of injections with sclerosing agents and surgery

EGMONT J. ORBACH, M.D., *New Britain, Conn.*

ETIOLOGY

Heredity, congenital weakness of connective tissue, hormonal influences, valvular insufficiency and chronic stress are etiological factors of primary varices.

Piulachs and Vidal-Barraquer¹ believe that the primary cause is a dilatation of congenital arterio-venous fistulae. Every individual has these fistulae throughout life. Starting agents are progesterone preponderance in pregnancy, heat, traumatism and chronic stress like prolonged standing. They open up these fistulae.

Secondary or collateral veins develop in the course of deep vein obstruction caused by acute thrombophlebitis of the ileofemoral vein or

after organization of thrombosis of the femoral and/or popliteal vein.

PATHOLOGY

Primary varices are frequently asymptomatic, and rarely produce skin pathology like ulcerations, eczema and leg fibrosis. These changes usually follow vein obstruction with acute thrombophlebitis or thrombosis. Secondary collateral veins, usually small, may be present here.

In primary varices the saphenous system is incompetent, which can be demonstrated by the Trendelenburg test:

The blood of the vein is drained by elevating the leg, and a tourniquet applied around the upper thigh. Then, with the leg dependent, the varicosities fill in 30 seconds. As soon as the tourniquet is relieved, the veins become distended immed-

1. Piulachs, P., Vidal-Barraquer, F., *Angiology* 4:59-100, 1953.

ately, proving incompetency of the sapheno-femoral valve.

In the case of secondary varices the veins fill within 30 seconds with the tourniquet around the upper thigh. The blood reaches the saphenous system through incompetent perforators.

Employing the Perthes test, conclusions can be drawn as to the patency of the deep veins:

The tourniquet is applied below the knee, and the patient flexes the knee forcefully several times. If the veins below the tourniquet collapse, patency of the deep venous circulation is proven. This is the case in primary varices. In secondary varices the veins below the tourniquet do not decrease in size, if the deep veins are completely obstructed. There are various degrees of decrease in veinfilling according to the degree of deep-vein obstruction.

Venous pressure studies show that in primary varicosities the pressure of the varicose saphenous vein decreases on motion as in normal veins. In the case of secondary varicosities and after femoral and popliteal vein ligation the venous pressure inside the saphenous vein increases.²

THERAPY

The therapy of the varicose complex consists in bandaging, sclerosing injections and surgery.

BANDAGES

There is no other way than bandaging to control edema effectively. The purpose of bandaging is four-fold:

1. Immobilization and protection of the skin with freedom of joint mobility.
2. Compression of the venous- and lymph-channels.
3. Prevention of edema.

4. Replacement of lost elasticity of skin and subcutaneous tissue.

As to the technic, only 3 simple rules have to be followed:

1. Pressure has to be applied evenly, up to the patient's tolerance.
2. The bandage has to cover the foot down to the metatarsal heads, the heel and the lower leg up to the tibial spine.
3. The bandage should be applied with the foot at a right angle to avoid pressure.

Correct bandaging is so easy that it can be taught to patients with little effort. K. Sigg uses a 3 inch bandage for the foot and ankle, and a 4 inch bandage for the lower leg.³ The incorporation of a sponge rubber over the area of the ulceration or chronic eczematization proved extremely helpful. The sponge must not be laid upon bare skin.

Elastic cotton bandages (ace bandages) are recommended. Adhesive elastic bandages should not be applied to the skin, but a padding gauze layer over the skin has to be included to prevent eczematization. Likewise Unna's boot must not be applied to the skin, but over a padding gauze layer. Under an elastic adhesive bandage Unna's boot stays moist and acts as a padding layer. In this case it may be applied directly to the skin. If bandages have to be worn over a long period of time, the use of Desitin ointment or Desitin lotion prevents skin irritation.

Elastic stockings lose their elasticity within a short time. However, they are preferred by women.

SCLEROTHERAPY

Injection, the therapy of choice for years after the First World War, today is used exclusively by many physicians here and abroad. In my experience recurrence after radical

2. de Camp, P. T., et al, *Surgery*. 29:44-70, 1951.

3. Sigg, K., *Angiology*. 3:355-379, 1952.

surgery of huge primary varices is less apt to occur than after sclerotherapy; this, however, is not true of secondary varicosities. One finds new varices at or around previous operation sites. A middle-of-the-road policy appears advisable.

The advantages of sclerotherapy are lack of morbidity and fatality, and that the patient does not have to interrupt his work.

That the rate of post-operative mortality is less than 1% as reported, is doubtful. The publications usually originate from larger clinics, where operations are done with great skill and under the best conditions. Post-operative deaths are caused by pulmonary embolism, coronary occlusion, anesthesia, sepsis and gangrene.

ALLERGY REACTION

Disadvantage of sclerotherapy is its high recurrence rate. However, even a temporary cure of varices appears welcome, when this procedure cures an associated ulcer or eczema. Reinjection or later surgery can always be undertaken. A problem is allergy reaction; but the availability of anti-histaminics, ACTH and the employment of minute doses of sclerosing agent make this danger remote.

Sclerotherapy is the choice: for the treatment of smaller and medium varices, for the postoperative eradication of varices, for the relief of varices during pregnancy, for the obliteration of "feeder veins" around ulcerations, and in cases in which surgery is contraindicated or the patient refuses it, and injections may be expected to cure the skin lesions.

The sclerosants may be classified into four groups:

1. Hypertonic solutions (sodium chloride, sodium salicylate and sugar solutions)
2. Protoplasm poisons (quinine)
3. Fatty solutions (sodium morrhuate etc.)
4. Synthetic surface-active substan-

ces (Sotradecol®).

The amounts of sclerosing agents used should be small, to prevent spillage into the deeper vein channels and the production of deep phlebitis.

During the last 8 years I have used Sotradecol® (3%, Wallace & Tiernan) exclusively. The average dose is 0.3 c.c., no more than 0.5 c.c., for each injection. One to three injections are done during each session,⁴ the proximal varix first. Injections are given at 4- to 7-day intervals.

AIRBLOCK TECHNIC

With the leg in the dependent position, an airbubble ($\frac{1}{4}$ to $\frac{1}{2}$ c.c.) is injected into the distended varix, as a safeguard against paravenous injection and slough. If the needle should not lie inside the vein lumen, the injected air will produce a subcutaneous emphysema, and warn not to inject the sclerosing agent at the elected site and to choose a new one. To enhance the effect of Sotradecol, foaming is produced by shaking the syringe with the airbubble plus solution. Following this layers will be injected in succession: Air-foam-solution (3-layer technic).⁴

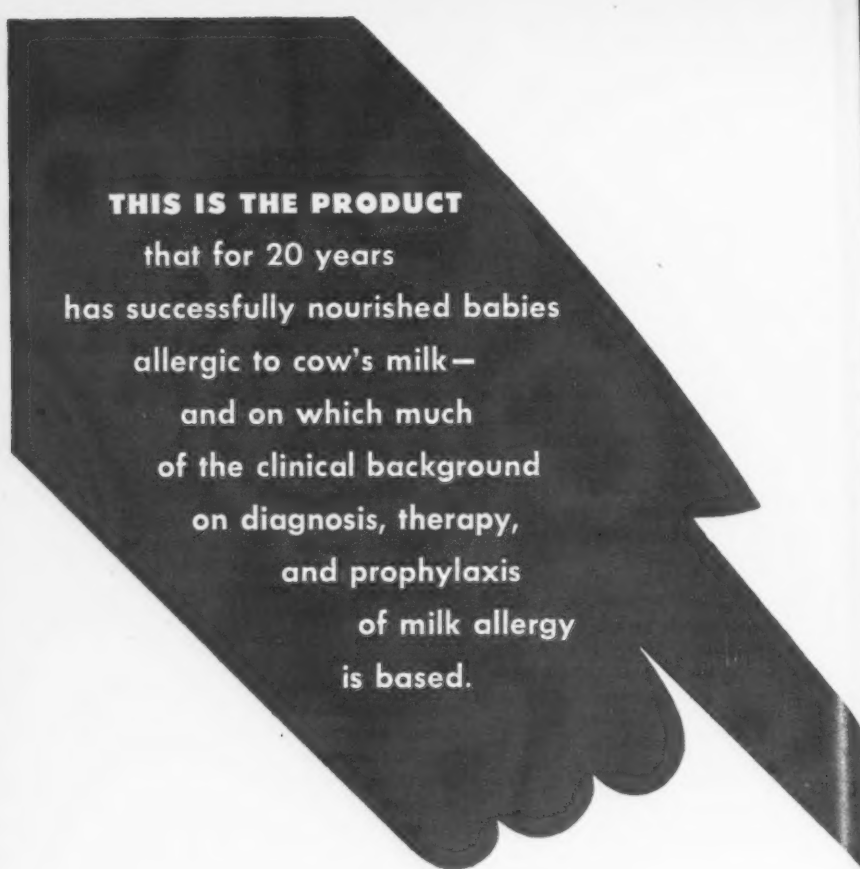
Right after the injection a small gauze pad is applied to the injection site, and compression obtained by an ace bandage, to be worn throughout the treatment and 4-6 weeks later.

If a large thrombus should form, it must be evacuated through stab incisions. These thrombi are not only painful, but form the basis for recanalization. Vein obliteration must be obtained by intima concretion.⁴

SURGERY

The basic operation for varicose veins is ligation of the saphenous bulbous at the sapheno-femoral junction. After the saphenous bulbous is divided the proximal stump is dis-

4. Orbach, E. J., *Angiology*. 1:302-305, 1950.



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1. Glaser, J., and Johnstone, D. E.: Ann. Allergy 10:433, 1952.
2. Clein, N. W.: Ann. Allergy 9:195, 1951.



sected free and incoming tributaries (3-4) are divided and ligated. The proximal stump is then ligated near the femoral vein, using silk or cotton ligature. Then the stump is transected. If possible, the varicose saphenous vein should be stripped. After the operation a supportive bandage is applied from foot to groin, and patient becomes ambulatory immediately. The operation must be done in the hospital under strict antiseptic precautions, and whatever anesthesia is preferred. Only in exceptional instances should both legs be operated on simultaneously. Antibiotics are given routinely. Ulcerations must be either clean or healed before vein operations are done.

In cases in which the vein cannot be stripped, high-saphenous ligation and subfascial multiple ligation at the blowout points are done. The blowouts can be localized by the multiple Perthes-tourniquet test.

For a technic of ligation published in 1947, a special ligation knife was constructed.⁵ Instead a large three-quarter cutting edge needle may be used.

The supportive bandage is removed after one week, and sutures after one and two weeks. Superficial veins not eradicated by surgery are injected in the subsequent postoperative course.

Secondary varicose veins due to deep chronic phlebitis can be either removed surgically or injected without adverse effects. Eczema and ulceration heal promptly after these procedures.

THE POSTPHLEBITIC LEG

For the postphlebitic syndrome (edema, fibrosis, ulceration, eczema), ligation of the superficial femoral vein and popliteal vein has been suggested during the last few

years as curative measures.^{6,7} One school combines ligation of the superficial femoral with stripping of the saphenous.⁶ If after ligation of deep venous channels the patient is advised to wear a support, the procedure is admittedly a failure.

Without the wearing of supportive bandages, prevention of long standing and traumatism, the postoperative results are not better than of conservative therapy. The assumption that conservatively cured ulcerations break down sooner or later and that ulcerations healed after surgical intervention remain healed, is not warranted by facts. J. C. Luke⁸ treated 52 cases conservatively with bedrest and supportive bandages—result 17% ulcer recurrences. Fourteen cases were treated by operations (vein ligation, lumbar sympathectomy, skin grafting), followed by wearing of supportive bandages—recurrences 21%. In 8 cases of surgical interference without postoperative bandaging the result was 100% reulceration.

SUMMARY

Primary varicose veins are caused by valvular incompetency of the saphenous systems.

Secondary veins are collateral enlarged veins, compensating the obstructed deep veins following thrombophlebitis and thrombosis of the femoral and popliteal vein.

Therapy consists of bandaging, injections with sclerosing agents and surgery.

It is a fallacy to exclude one type of therapy in favor of another one.

The treatment of the postphlebitic leg by surgical attack upon the femoral and popliteal vein is still experimental. A conservative approach is recommended.

5. Orbach, E. J., *Am. J. Surg.* 73:631-633, 1947.

6. Linton, R. R., *Angiology*, 3:431-439, 1952.

7. Bauer, G., *J. Intern. Chir.* 8:937, 1948.

8. Luke, J. C., *Angiology*, 4:413-417, 1953.

The Burned Patient

*General treatment is directed
toward the relief of pain and shock
and fluid replacement*

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Today we are threatened with burns of the masses as well as of the individual, therefore, this is one of the major problems in national defense, industry, and the home. Progress in this field in recent is as great as that made in the management of any other kind of injury.

The factors involved in burns are shock, toxemia and sepsis. The severity depends upon the extent and location of the burn, the age of the patient, and the interval of time between the accident and treatment. Our discussion will be limited to thermal burns requiring surgical treatment.

The burned patient's treatment and care will begin at the time of the accident and will end only after the definitive care is complete and he has returned to his proper place in society. In addition to saving life by combating shock, depletion and infection, our aim should be, also, to obtain the least scarring. This is best minimized by avoiding tissue destruction from chemicals and from the bigger factor — infection. Thus, infection should be prevented, or terminated early, so that the wound can be closed by skin grafting at the earliest possible time, before granulation piles up to form a large cicatrix.

In superficial burns the epithelium will be replaced from its deeper structures as the eschar drops away.

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After deep burns it grows from the edges. Its growth is favored by cleanliness, freedom from chemicals and by providing a smooth surface under which it can grow. Death may be expected if much over one-third of the body is affected. Treatment is general, local and definitive.

GENERAL TREATMENT

The general treatment is directed toward the relief of pain and shock, and fluid replacement. Pain is slight if shock has advanced, but agonizing in its absence. Adults are given morphine intravenously in one-half the dosage given intramuscularly, because as shock is combated there is danger of morphine poisoning. To children, tincture of opium 0.13 c.c. plus 0.06 c.c. for each year of age may be administered. Treatment of shock, if present, takes priority over the local treatment, both may be carried on simultaneously. The patient is undressed with a minimum of disturbance and exposure. In severe cases, clothing should be left on until the patient has partially recovered. Clothes smoldering or impregnated with chemicals should be soaked off in a water-bath. The patient is then placed in a warm bed, with the burned area covered with sterile drapes, and all other measures deferred until the general condition has improved.

Burn shock is best treated by the administration of adequate amounts of colloid and whole blood. In severe cases one aims to restore blood volume as soon as possible, so that kidney, liver and brain damage does not occur. Such plasma and red cells continue to be lost from the circulation into the burned zone for the first 24 to 48 hours, a more or less continuous replacement is necessary for the first 24 to 36 hours.

With burns of equal extent, children will be more severely shocked

than will adults. The signs noted in burn shock are: Thirst, chilliness and asking to be covered with blankets; sweating is a variable feature; the skin and mucous membranes are gray to blue; the pulse rapid with the volume fairly normal, as shock develops becoming thready. At first the patient is apprehensive, later apathetic, or even falling asleep. If the shock is profound, the patient may become semi- or completely comatose.

Evans and Biggers¹ set a limit of 4000 cc. of colloid and salt solution, and 2000 cc. of 5 per cent glucose solution daily, to care for the insensible losses of water. On this basis, a formula, was evolved by them, as follows: Colloids equal to 1 cc. for each per cent per Kg. of body weight; salt (0.9% NaCl) equal 1 cc. for each per cent per Kg. of body weight; 5 per cent glucose in water 2000 c.c. This amount is given in the first 24 hours, one-half this amount in the second 24 hours, with 2000 c.c. of 5 per cent glucose given daily. An example of fluid requirement is as follows:

EXAMPLE

Thirty percent burn in a 70 Kg. patient (first 24 hours.)

Colloid (blood, etc.) $30 \times 70 = 2100$ c.c.

0.9 per cent NaCl $30 \times 70 = 2100$ c.c.

5 per cent glucose in water 2000 c.c.

This makes a total of 6200 c.c. for the first 24 hours with one-half the amount of saline and colloid the second 24 hours, plus 2000 cc. of 5 per cent glucose in water. When this formula has been followed, shock has been prevented or adequately treated. After forty-eight hours the burn shock is normally well in hand, and generally, no further concern need be had for intravenous burn therapy, except whole blood for anemia.

After the clothing and debris are removed, the patient is placed upon a sterile stretcher, table or bed and the final dressing begun. The hair is shaved about the wound, only gentle cleansing being done, as the soiled skin with the greases and dirt will be sloughed off in a few days at most, and a fine mesh gauze impregnated with petrolatum is

1. Evans, E. I., and Bigger, I. A., *Ann. Surg.* 122: 693, 1945.

placed on the affected area. (Strips of gauze 12 by 15 inches, are the most convenient.) Dry sterile gauze is then laid over the petrolatum gauze to a depth of six to eight layers, then the necessary padding for fixation is applied and all of this is wrapped with gauze bandage and secured with adhesive tape. Special attention is given to keeping the fingers separated. This dressing will carry the patient over the acute stage of his injury, and in superficial burns to completion.

HYPERTONIC SALT BATH

The dressing will be changed in five to seven days, and this is done by placing the patient in the slightly hypertonic salt bath, at about 105°F., according to the patient's comfort. The outer dressing is removed before entering the tub, and the soiled dressing allowed to soak off in the water. Then necessary debriding, evaluation of the burn, and definitive planning made daily, plus *exercising of joints and muscles* are to be started. The water drained off, redressing may be done in the tub or on a stretcher or sterile bed. This dressing should be either a wet boric dressing or a vaseline gauze dressing applied so as to be comfortable to the patient. We like to redress these patients daily, or at least every other day. The patient is now placed in bed in a private room, if possible, and an indwelling Foley catheter is inserted. The intake and output of urine is measured and recorded. An hourly output of 25 to 50 c.c. is desired, and the intravenous fluids are regulated to this and in the extensively burned patient. The blood hemoglobin is determined every four of the first 48 hours. Some patients require more fluids, some less. The original blood and urine studies may be considered the normal, and variations from this will be assumed as a change in the patient's condition.

LOCAL TREATMENT

The local lesion is dressed and cleanliness maintained, until the necrotic tissue is sloughed off, and granulations become pink and firm. In a series of 353 seriously burned patients the time average was 28 days, the shortest period being 14 days and the longer period from burn to grafting was 43 days.

In the daily bath debridement, an evaluation of the progress of the patient is made. The dressings are made as simple as possible, for patient's comfort, and conservation of time and material. Proprietary preparations have been studied in our cases and we have found no preparation superior to the simple, economical materials which is found in most hospitals and dispensaries—boric acid, normal saline, petrolatum, etc.

DEFINITIVE CARE

As soon as the slough has separated, preparations for grafting is made. This consists of correcting the body chemistry. In the final preparation for grafting, a redetermination of the need for whole blood, plasma and antibiotics is made.

The covering of the burned area, if small, offers no particular problem, but if large and the available skin is minimal, the patch graft has been used to obtain a more rapid cover than with large sheets of skin. In cases which require maximum coverage with minimum available skin, the skin grafts are cut into small, irregular squares and placed directly on the granulations. As each of these small squares grows, it spreads out from its periphery to approach and join its fellow. This procedure is repeated until complete coverage is obtained. Usually the scarring will require a final operative release of definitive surgery.

If the granulations are clean and

the patient's temperature remains normal, the dressings are not disturbed for a period of seven to nine days. However, we have no hesitancy in changing the dressing in 24 to 48 hours if indicated, because the skin graft will be "stuck" in only a few minutes after being applied. If, on the first dressing, any hematoma or cellulitis is present, wet dressings are applied and indicated antibiotic therapy instituted. When only a part of the burned area has been covered,

the tub baths are resumed, and the grafting repeated again and again until complete coverage is obtained.

SUMMARY

Experiences of a large series of burns are reviewed and the practical measures found to be most productive of good enumerated. The usefulness of hypertonic bath, in the care of the burned patient has been described, along with the general care, local care and definitive care.



Prevention of Postoperative Pulmonary Atelectasis

Postoperative atelectasis is due to a deficient expulsive mechanism, a reduction in bronchial caliber, or increase in secretion, and is more likely in the presence of one or more of the following: (1) a history of bronchitis; (2) clinical or radiological evidence of bronchitis; (3) infection of the upper respiratory tract in the 14 days preceding operation (4) an abdominal operation.

The method of treatment consists in systematic bronchial drainage after the patient has inhaled, as a mist, 1 ml. of a 1% solution of isoprenaline. The foot of the patient's bed is raised at least 18 inches, and clapping and vibratory percussion are administered to the chest wall, especially the bases, the treatment being given for 5 or 10 minutes with the patient in each of the right and left lateral and prone positions. This treatment is repeated three times a day until no sputum is produced; it may have to be continued for up to 14 days before operation. In emergency surgery, where tipping is con-

traindicated, the isoprenaline only is given. After operation, when consciousness returns, inhalations are given 6-hourly and physiotherapy is started again as soon as the condition of the patient permits (usually after 6 to 12 hours). Treatment must be very thorough for 24 hours after operation and must be continued for at least 5 days. When there is evidence of atelectasis treatment must be given hourly, and if re-expansion is not achieved within 12 hours, bronchoscopy must be considered.

The results obtained in a group of 90 patients treated by this method are compared with those obtained in a similar group of 90 patients who received breathing exercises before and after operation. Of the former group, 8 showed radiological evidence of atelectasis, compared with 39 in the latter group. By way of conclusion it is pointed out that these results can be obtained only when treatment is directed to the relief of the three etiological factors simultaneously.

K. Palmer, A. Sellick, *Lancet*, 1:164, 1953.

A Present-Day View of Bladder Tumors

When hematuria is present palliative therapy is contraindicated — immediate cystoscopic examination is essential for early diagnosis

J. ULLMAN REAVES, M.D., F.I.C.S., Mobile, Alabama

Bladder tumors present no symptoms or signs that are pathognomonic. Hematuria is the most frequent and most important clinical indication, and Geraghty's figure of its being the initial symptom in over 77 per cent of the cases has risen to as high as 97 per cent in the light of present-day statistics. Whether this hematuria is gross and total, or scant and terminal, the cause of the blood must be found out as soon as possible. In 1945, Milner reviewed 245 cases and found that even though hematuria was the presenting symptom in over 94 per cent of the cases; twelve months and fifteen days was the average elapsed time, before the patient finally presented for diagnosis and treatment. No

method which palliates should be tolerated, as the bleeding point is more easily located cystoscopically while it is bleeding, and the tumor diagnosis should be made as early as possible, for it is the early-diagnosed cases which are cured and remain cured.

CYSTOSCOPY

In the early days of cystoscopy the lens and the lighting system were poorly developed, as compared with the present-day instruments, and the cystoscopist was looking at a mirage; and there was no one with sufficient knowledge of the true condition to dispute the diagnosis, or to point the way to a clearer opinion. Careful noting of the

symptoms and urinary examinations, supplemented with bimanual palpation of the bladder region, were the only other means except open surgery to diagnose a tumor of the bladder.

Cystoscopic interpretation is the most important point in diagnosis, and experience will train one to judge fairly accurately the line of demarcation between the extension of the neoplastic process and normal bladder tissue cystoscopically. Certainly the chance of error to do this differentiating bimanually in any case is far greater than by cystoscopic observation, or direct visualization through open surgery.

The most skillful cystoscopist cannot always tell just how far the tumor has invaded into the bladder wall. This also holds true in an open operation with segmental resection; so, regardless of one's experience, the fact is that invasion of the vesical wall by carcinoma may occur without visible evidence on the mucosal surface of the bladder. Jewett, states that the prospect for cure is best determined by ascertaining the depth to which the tumor has invaded the bladder wall, and that this can be done with a high degree of accuracy by means of the bimanual pelvic examination if one has had sufficient practice. In our cases where the tumor is small this bimanual examination fails to reveal anything, which is concrete evidence that we are dealing with bladder invasion or tumor, or if cellulitis has developed, intra- or extra-vesically, there is too much resistance to allow a demarcation of the tumor edge. We do not practice bimanual pelvic examination postoperatively, for fear of pushing cancer cells into the perivascular areas or lymphatics of the bladder wall, thereby adding to the incidence of metastatic invasion.

UROGRAM

We believe excretory urograms should be made in every case of bladder tumor, in order to rule out possible primary malignancy in the upper urinary tract, as well as to establish the presence or absence of obstruction in one or both ureters as a result of the tumor, either by infiltration or by pressure. Ureteral occlusion or dilatation is often silent, and knowledge of the presence of either one or both is important in our treatment.

Ash observed that the location in more than two-thirds of 2,700 cases of bladder tumors was on the posterior wall near the trigone, and that tumors on the anterior portion of the bladder wall were uncommon. Young and Scott, previously, in a much smaller series had formed the same opinion.

INFILTRATING TUMORS

Infiltrating tumors may be present without any intravesical projection, and the mucous membrane may present a perfectly normal cystoscopical appearance, making early recognition very difficult. In such cases, and in those in which edema and necrosis have set in, a biopsy will add to our knowledge of the existing pathology. A period of bladder treatments, such as bladder irrigation, catheter drainage or fulguration, may best precede the biopsy when necrosis is present.

The early German pathologists were of the opinion that organs frequently involved by primary neoplasms seldom become the seat of metastasis. Most bladder tumors are primary; the few secondary tumors which have been encountered, according to Huggins, have been leukemic infiltration, endometriosis and direct involvement by extension of cancer of the bowel and uterus.

CLASSIFICATION

The more simple our classification of these tumors the better. Some of these tumors change their pathological picture as they progress, but not their classification, this being for the most part a pathological procedure. From a clinical point of view bladder tumors are either papillary tumors or solid neoplasms. Jewett and Blackmon have demonstrated that these groups merge imperceptibly, and though all bladder tumors are potentially malignant, as pointed out by Kretschmer, Graves, Hinman, Rokitsky and Ockerblad, in general a papillary lesion is less malignant than a solid cancer. Ash, Beer, Buerger and others believe that there exists an essentially benign type of papilloma of the bladder. Thus we see that the proper interpretation is contingent upon the collaboration of urologist, technician and pathologist, if the present controversy is to lead to a true evaluation.

TRANSURETHRAL APPROACH

Priestly states that the best chance to eradicate cancer anywhere in the body is the first chance. This must be borne in mind in deciding whether the transurethral or the suprapubic approach is preferable in a given case. For the greater number the transurethral approach is preferable, by reason of their location, as well as be reason of their being visible cystoscopically. More fall into this category as we are trained in early diagnosis of these cases, and operators become more adept in transurethral manipulation necessary in the eradication of the tumor.

Transurethral resection and electrocoagulation are best suited for lesions limited to the bladder. Those located anteriorly at the bladder neck, in the fundus, or deeply invading the prostate gland have proved

inaccessible to this type of surgery in my hands. Fortunately these form only a small percentage of bladder tumors.

By use of transurethral operation good results are obtained without manipulation, thus avoiding the danger of squeezing tumor cells into the lymphatics and so causing metastasis. The heat produced in this procedure spreads into the lymphatics for some distance beyond the limits of coagulation, serving to destroy tumor cells which may already be on their way to metastasizing. No spillage of cells outside the bladder is caused by the transurethral approach, which accounts considerably for its low mortality and morbidity rate, with practically no change in bladder function. Reexamination at regular periods should be carried out in every case. It has been the custom of Hinman, Howard and others, to have the patient return a month after treatment and then to destroy any recurrence. If no recurrence, the patient should return in two months, then three months and every three months thereafter for a period of two years, when the interval can be stretched to every six months for the next three years.

The bladder is not too distended, but only enough for good visualization of the tumor neck or base as the case may be. The current is stepped down to the point where the loop engages smoothly, thus obviating the excitation of violent contractions of the bladder muscles.

We use the resectoscope to remove the tumor tissue, cutting well into the muscularis at its base. Care is taken in selecting the proper specimen for microscopic study, so the pathological report will give a good idea of the penetration of the tumor into the muscularis. The resected base is lightly fulgurated and all bleeding points are controlled.

Radon seed of 1.35 millicuries are then implanted in such a diagram as to radiate 0.5 to 1.0 cm. of the normal margin. This measure will destroy any small group of cells which may have invaded the perivascular area or lymphatics.

Catheter drainage is employed postoperatively for from two to four days, the catheter being connected to the drainage tube in such a manner as to keep the bladder partially filled. This prevents radiation of the opposite bladder wall, and allays the discomfort from radiation of normal tissue.

The patient is allowed regular diet and water is forced. His urine is kept alkaline and we prefer sulfadiazine gr. $7\frac{1}{2}$ q.i.d. for the urinary anti-septic.

The patient is far more comfortable with a functioning bladder and this can best be accomplished transurethraly in the very large percentage of cases. We still see an occasional case in which it might be easier to open the bladder and resect, fulgurate and implant radon through a suprapubic wound under direct vision; but the resulting morbidity is greater, to say nothing of the mortality. We must completely individualize the patient suffering with bladder tumor, if we are to obtain the best results in each case. The thoroughness with which this individualizing is accomplished, rather

than some pet theory of the operator being read into the case with pink glasses, is what we must strive for. We want to know the cellular structure and type of tumor, but this knowledge usually comes after and not before our therapeutic approach to the problem, and this is as it should be. It is our duty to the patient to make our first chance at therapy as early as possible, and to deliver such telling blows that our follow-up inspections will, in their turn, lower the patient's anxiety to a minimum.

We will grant that an occasional case fares well with total cystectomy and diversion of the urinary stream, but the over-all picture of this condition as we have seen it is that the survival rate is low and those few patients who do survive are miserable for the short life they have postoperatively.

SUMMARY

The greatest factor in our treatment of bladder tumors is early diagnosis, and it is folly to give any medication, which will postpone cystoscopic examination for even a day when hematuria is present, as the patient experiences a false sense of security when he ceases to see blood in his urine. The conservative approach will find more patients treated by more men earlier, thus lessening suffering, morbidity and mortality.



Trichomonas Vaginalis

Trichomonas vaginalis in the vaginal secretion or in the urine does not mean that clinical vaginitis is present. The organism is reported regularly by the laboratory in urine specimens from women who have no symptoms or objective findings. Ex-

amination of the vaginal secretions usually discloses trichomonads even though there are no symptoms. I have never found *Monilia albicans* in the vaginal secretion without symptomatic vaginal moniliasis being present.

Bieren, Roland, *Med. An. D. C.*, Jan., 1953.

The Acne Problem

*No specific cure is available for this
most common skin disease but much can be done
to dry the skin and clear the lesions*

ROY L. KILE, M.D., Cincinnati, Ohio

One of the most common of all skin diseases is acne vulgaris. It is rare for anyone to go through adolescence without a few comedones; not a few develop many lesions with extensive involvement. Acne is by no means limited to adolescence; it is seen during the menopause as well as premenstrually in many otherwise normal women. Its severity varies tremendously. At times there are large cystic lesions that result in pitted, deforming scars with involvement of the entire upper half of the body.

That a patient will outgrow the disease is by no means certain. It is not uncommon to see new patients with acne in their late twen-

ties and early thirties. Occasionally, it will begin at this age. The two main criteria for active treatment of acne are cure without scarring and without injury to the psyche of the patient. Acne is usually on the face and adolescents are apt to become quite self conscious and distressed over their problem. A few will be so upset by the acne that they will be reluctant to be seen in public. Active and effective treatment will earn for you the deepest gratitude. It is very unwise and unjust for us to pass over as trivial something which to patients are tremendously important. If they feel it important enough to consult a physician, we must, in honesty, give

them the attention they need or refer them to some doctor who will do so.

Acne usually begins with the oily nose of the early adolescent. It is at this age that the comedones usually begin, soon to be followed in many individuals by papules, pustules, and eventually, cysts. Recently, a three month old child was seen with a severe acne — many comedones, pustules and some residual scarring. Even with hospitalization and very careful workups from the endocrine standpoint, seldom is anything abnormal found. Nonetheless, this possibility should always be kept in mind in observing a small infant who has acne. When a child gets to the seventh or eighth year, it is not uncommon to see a few comedones. This often foreshadows acne to appear at adolescence. Comedones are the primary lesions of acne. Hair follicle orifices are stopped up by keratinous material which prevents the free outflow of sebum, and there result the comedones and cysts of acne. As more inflammation occurs papules result and following this, infection and pustules often appear.

We are all familiar with the flare of acne that occurs just preceding the menses in many women. This, and many other factors, point to some basic endocrine imbalance in these individuals. Eunuchs never develop acne, but given androgen, comedones will sometimes start to develop over their faces. Following the discontinuance of androgen, they gradually disappear.

The acne bacillus can usually be found in many of the lesions, in the author's opinion playing a secondary role. The more one studies acne the more one is impressed with the relationship to some endocrine disturbance. The difficulty is the huge gap in our knowledge of endocrine physiology. As a result, our therapy

has been rather disappointing. Perhaps the sebaceous glands have some tie-in with the endocrine system that may account for the stimulus to them in certain periods of our lives.

The reaction found around the hair follicles in acne is much like a foreign-body reaction. There has been disagreement as to whether the cystic lesions should be opened and drained and also whether the comedones should be removed. The danger in this procedure is scarring. Oftentimes, under proper therapy, the comedone will remove itself as the sebum decreases in amount and the horny material is removed from the mouth of the hair follicle without the attendant trauma of forcibly removing them. The author opens pustules and some large cysts, particularly those that are infected, especially if pain and erythema from pressure are being caused. It is amazing how some of the larger lesions, if left alone, will heal with minimal of scarring. A small cataract knife is a useful instrument for opening these lesions when indicated.

DIET

Many physicians—including some dermatologists—still restrict fat intake as well as many other specific foods. I have seen teenagers lose 10 to 20 pounds on such a diet. There is no real evidence that this is of any value. The ingestion of fat does not make the skin more oily. People with very dry skin can eat all the fat they possibly can and their skin stays dry. The only foods that are restricted are a few that are known to produce flares in some individuals with acne. Chocolate, in all its forms, as well as cola drinks are best left off. Fish and nuts may be restricted. The former, when of ocean origin are restricted due to the high iodine content since it is known that iodides aggravate most

acne patients. It has been said that there is as much iodine in one oyster as in a pound of iodized salt. Patients with acne should not take bromides or iodides. Some feel that ingestion of large quantities of milk may be a factor. When I find one is taking several quarts a day, I usually advise reduction, but I don't believe it has any effect. Dietary restriction kept at a minimum for the few foods mentioned does not constitute very strict dieting.

The biggest problem is often to convince the family that a strict diet is not necessary. This is usually not hard if the patient has already been on such a diet, has lost weight, and has found the acne has not improved.

VITAMINS

Patients restricted on Vitamin A will develop follicular plugging and hyperkeratosis, so Vitamin A has been used in the treatment of acne. It certainly isn't specific, but it does seem to help. The author prefers a crystalline, water-soluble Vitamin A, 50,000 units, two to three times a day. Many of these patients will show a mild anemia, and it may be well to give them some Vitamin B₁₂ along with iron, folic acid, etc. Infected lesions may subside under a course of antibiotics — prolonged therapy with quite small doses. For a more prolonged effect, a staphylococcus, vaccine, e.g., Squibb's Ambotoxoid, is found very beneficial. Start with 0.01 cc. hypodermically, and gradually increase. Vaccines made from the acne bacilli combined with staph and strep have not been effective, except perhaps in the more severe cystic types.

ENDOCRINE THERAPY

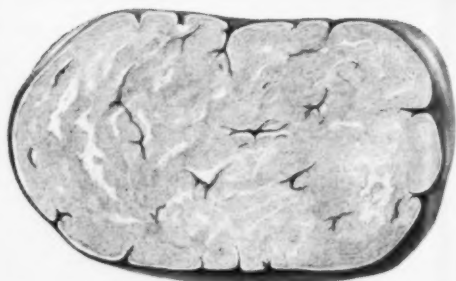
The endocrine approach to the therapy of acne has been a difficult one. Apparently, androgen is a definite factor whether it is produced

by the testes or adrenals. A large series of patients has been given estrogen during the postovulatory phase of the menstrual cycle, starting the 16th day of the cycle, giving one tablet of 1.25 mg. of Premarin a day, or 12 mg. of Tace per day, until the menses are due, at which time it is stopped. Some individuals will have a disturbance of menstrual rhythm, usually a little more with the Premarin than with the newer preparation, Tace. While some improvement has been noted, the results are equivocal. Some girls' breasts will become sore on this preparation. The cycle adjusts itself after a time. Individuals with cystic lesions in the breast, etc. should not have this form of therapy. Furthermore, androgen therapy is not indicated although there have been several reports of its use. The author has not tried progesterone although there have been recent reports of its use in certain types of acne. Any therapeutic agent is difficult to appraise in the treatment of acne, inasmuch as the disease is often a cyclic one with exacerbations and remissions.

Cortisone has produced acne-like eruptions, which again points to the relationship of the disease to the endocrine system. Estrogens have been used in various local applications. Both lotion and ointments have been available for this purpose. The results of such treatment in a few cases have not been impressive.

EXTERNAL THERAPY

For many years sulphur and resorcin have been used topically in the treatment of acne. Sulphur in the form *lotia alba* is an old standby. Some of newer preparations can be used in the daytime, as they are not unsightly; some others contain varying amounts of pigment in order to help hide the lesions. Two of the



Functioning ovary in a woman
of childbearing age.

Inset • Postmenopausal ovary,
consisting chiefly of sclerotic
and fibrotic tissue.

Vallestril's unique selective estrogen action results in maximal therapeutic potency with minimal complications; a singular freedom from uterine bleeding is noted.

Selective "Target Action" in Vallestril® Therapy

Vallestril is described as having "target action" because it provides potent estrogenic activity—only in certain organs.

Vallestril combines a potent action on the vaginal mucosa with minimal effect on the uterus or endometrium.

Investigators¹ have carefully and repeatedly measured Vallestril's pharmacology. They found this estrogen more active than estradiol and twice as potent as estrone. This effect was solely on the vaginal mucosa, as determined by the Allen-Doisy technic. In addition, Vallestril was found to have only one-tenth the potency of estrone on the uterus by the Rubin technic. These facts may well explain the exceedingly low occurrence of withdrawal bleeding with Vallestril.

Sturnick and Gargill¹ studied the clinical effectiveness of Vallestril for a period of two and one-half years.

They found it "... an effective synthetic estrogen ... singularly free from toxic effects and complications, especially uterine bleeding..." Other unwanted reactions, common with estrogen therapy, such as nausea, mastalgia and edema, occur less frequently with Vallestril. Vallestril is preferentially indicated in the therapy of the menopausal syndrome and in the other conditions—the pain of postmenopausal osteoporosis and osseous metastases of prostatic cancer—in which estrogens are of value.

Dosage: Menopause—3 mg. (1 tablet) two or three times daily for 2 or 3 weeks, followed by 1 tablet daily for an additional month. Supplied only in scored tablets of 3 mg. G. D. Searle & Co., Research in the Service of Medicine.

1. Sturnick, M. I., and Gargill, S. L.: *New England J. Med.* 247:829 (Nov. 27) 1952.

better known of such preparations are Acnomel and Sulforcin Base. Acnomel is available in only one shade and to some is not satisfactory for this reason. Sulforcin Base on the other hand is available in three shades, making it cosmetically acceptable, and two strengths. Males do not like to use this type of preparation. I don't believe their therapeutic effect is any greater than some of the older sulphur preparations that we have had available for many years. At bedtime, a preparation can be used containing sulphur, salicylic acid or resorcin in varying combinations and in varying bases. Even Vlemminckx's solution, in spite of its foul odor, is sometimes useful. It can be painted on or diluted and used as wet compresses. It is well to vary from one preparation to the other—depending on a patient's tolerance. At times a skin not too oily, will not tolerate any of these preparations. Usually, a compound of 3% resorcin in a shake lotion such as 10% zinc oxide and starch with glycerin and water as a base works well. Even though it has been shown that when the sebum is removed from the surface of the skin, it recurs quite rapidly, it has been felt improvement occurs by using a fat solvent on the skin surface after washing the face with soap and water. If for no other reason, it makes the skin look lighter and removes the film of oil. The patients do this before applying one of the above-named preparations. Such a preparation is Sebanil. Any druggist can make up such a preparation using, for instance, acetone and petroleum ether in alcohol, and a small amount of perfume.

SOAPS

Most patients with acne can use soap freely. Salicylic soaps as well as those with sulphur are available. Steiffel makes a whole series of

such preparations. Synthetic detergents, which have a drying effect, are rapidly becoming available in bar form and many patients with the oily skins of acne do well with their use. Lava, a pumice-containing soap, lathers well and also helps remove surface oils. It can be used quite well by many individuals with acne and is usually readily tolerated by them. The application of medications to the skin using soap as a vehicle is not very successful. The drying effect is the desirable one for this condition.

SUMMARY

Acne is a common skin disease that often has marked effects on the patient suffering from it. Many physicians and parents have assumed that it was insignificant and unimportant. For the patient who has the problem, it is a serious matter. At this stage in life, there are many problems and adjustments to be made. Another one is added for the acne victim. We as physicians should not ignore this disease, but take some time to talk to him, and treat him for his problem. Many grateful patients will result. In spite of the fact that no specific cure is available and we do not know the exact cause of the disease, still a great deal can be done to dry up their skin, clear up the lesions, and in many cases produce a cure. When x-ray therapy is available, it works as well or better than any other agent we have available. It must be used in proper dosage and with a great deal of caution. Just as with many other modalities in the practice of medicine, harm can result from its improper use. Ultra-violet light will often have a beneficial effect due to its drying and desquamating action on the skin. By far the best physical modality available,

however, is superficial x-ray. When properly used, it is quite safe.

We should lend a sympathetic ear to the teenager who is confused by this problem and not ignore it as a trivial and insignificant one. Many of these people are duped into buying innumerable cosmetic preparations that are sold at most cosmetic counters. As a result, considerable money

has been wasted in trying all sorts of such preparations. Physicians should rightly assume the role of managing the treatment of the person suffering from acne. Everything possible should be done for these victims of acne. Certainly we must not ignore the request for treatment of something that to them is exceedingly important.



Clinical Experience With an Oral Mercurial Diuretic

Although the parenteral route is generally accepted as the most effective mode of administration for rapid and immediate diuresis, oral therapy is considered superior for maintenance purposes, provided an effective, non-toxic preparation is available. In the present paper, the authors report on the results they obtained with a new oral mercurial diuretic (3-chloromercuri - 2-methoxy-propylurea), commercially known as "Neohydrin®." The preparation is available in the form of an uncoated tablet, containing 18.35 mg. of the compound, equivalent to 10 mg. of mercury.

Most of the oral mercurials tried heretofore have been poorly tolerated, inasmuch as they gave rise to stomatitis, gingivitis, abdominal cramps, vomiting and diarrhea. Their effectiveness has been, in general, below that of the parenteral drugs. Handley and associates have shown in the dog that Neohydrin administered intravenously had three

to four times the diuretic potency of meralluride (Mercuhydrin®). Chronic toxicity studies revealed that no essential difference existed between the new compound and the meralluride, if the greater diuretic potency of the former was considered and the dosage was adjusted accordingly. The acute cardiac toxicity of Neohydrin appeared to be less than that of meralluride. Griener and coworkers have bio-assayed the new oral mercurial and have demonstrated that this compound possesses three-fourths the diuretic potency of the standard (Mercuhydrin by intramuscular administration). All other oral preparations so far tested have come no nearer than one-fourth the diuretic potency of the standard. The authors' own experience with Neohydrin suggests this compound to be an adequate oral mercurial diuretic without undue toxic effects.

B. M. Kaplan, et al, *J. Lab. & Clin. Med.*, 42:269, 1953.

Surgery in Sigmoidal Diverticulitis

*Only appendicitis surpasses
diverticulitis as the major cause of illness
from large bowel inflammation*

J. L. MONTGOMERY, M.D., Caldwell, Idaho

Diverticulosis is a simple bowel outpouching without inflammation. Inspissated feces, incarcerated in small-necked pouches, are prone to bacterial contamination and thus the diverticulum becomes inflamed and we have diverticulitis.

Diverticulitis of the colon is commonly seen by internists and general practitioners. Vaginal discharge, backache and fistulae bring these patients to gynecologists, orthopedists and urologists. Diverticulitis is everybody's problem.

Diverticulosis, present in 20% of the population after age forty,¹ develops into diverticulitis in 15% and of this number (many thousands in the United States) one-fourth eventually come to surgical opera-

tion.² In this fourth we can only make belated attempts to treat complications, rather than primary attack of a disease. This situation is analogous to the treatment of appendicitis 60 or 70 years ago, when such complications were commonly permitted to develop and only the survivors were treated surgically.

Even today, thousands of stricken patients live in semi-invalidism with infected diverticuli, ultimately yielding an 18% mortality and a 29% morbidity.³

Only appendicitis surpasses diverticulitis as the major cause of illness from large-bowel inflammation. Earlier surgery for diverticulitis should be urged, especially since

1. Mayo, W. J., *Brit. M. J.*, 2:574-575, 1929.

2. Pemberton, J. deJ., et al, *Surg., Gynec. & Obst.*, 85:523-534, 1947.

3. Babcock, W. W., *Rev. Gastroenterol.*, 8:77-92, 1941.

80% is encountered in the sigmoid, an area readily accessible to operation.

Pemberton has found that in 25% of the cases it is impossible to differentiate by roentgenograms between carcinoma and diverticulitis. It is this diagnostic uncertainty that serves as the chief indication for surgical intervention at present. While it has never been proved that diverticulitis leads to cancer, this thought has been suggested periodically. Hyperplasia graduates into neoplasia elsewhere in the body. In any event diverticulitis certainly does obscure carcinoma and delay diagnosis. Roentgen diagnosis proves correct in only 57%.⁴

Conservative surgical measures are indicated for acute complications (abscess, sudden obstruction, rarely perforation) but most of these have been heralded by adequate warning through previous years.

Colo-vesical fistula, developing in 15% of surgically treated diverticulitis, also bears testimony to mistreated disease. Diverticulitis surpasses cancer as the chief cause of colo-vesical fistula.

Colostomy is especially disappointing. Only half dare be closed and of these, half must be reopened,⁵ while infected diverticuli still remain as a source of debility. Most surgical intervention comes as a last resort after disregard of warnings, when cure can scarcely be anticipated.

Laufman⁶ summarizes several large, representative series and compares conservative with more radical, curative therapy. The mortality for conservative operations (laparotomy, drainage, temporary colostomy) was 11.8%; that for curative operations which removed the

sigmoid (various resections including Mikulicz, direct anastomosis, obstructive resection) was 21%; conservative procedures failed in 32%; failures were only 9% following the more radical approach.

Thus, while temporizing measures carry half the mortality of radical measures, they are responsible for three times as many failures. Furthermore, these failures must then be subjected to further surgery with still higher mortality, morbidity and failure. Finally, the 21% mortality cited for various sigmoid resections may reasonably be expected to decline to less than 4% with standardization.

Modern day bowel preparation has decreased the mortality for colon surgery to one-fourth what it was in 1939. A review of 175 cases of diverticulitis treated at the Iowa Methodist Hospital in the ten-year period, 1939-1949, verified these conclusions, and the decision made to approach the problem more vigorously, and during the last months five consecutive sigmoidectomies were performed by one surgeon (J. B. Synhorst). Proximal colostomy was omitted and all results were completely satisfactory.

During 1951 the author, practicing in a community of 15,000, encountered diverticulitis as a common problem. The patients ranged from 27 (unusually young) to 77 years of age. However, in one instance, failure to do a proximal colostomy necessitated subsequent excision of a cutaneous fistula, transverse colostomy and finally sigmoidectomy. There is no agreement on the advisability of colostomy.

The points deserving emphasis then are:

1. Including closing colostomies which must be reopened, procedures which neither permanently divert the fecal stream nor remove the diseased segment fail

4. Graham, R. R., *Canada. M. Assoc. J.*, 36:1-7, 1937.

5. Smithwick, R. H., *Ann. Surg.*, 115:967-985, 1942.

6. Laufman, H., *Internal. Abstr. Surg.*, 73:222-223, 1941.

in 40%. Sigmoidectomy is much to be preferred. The mortality should be less than 4%.

2. Earlier curative surgery means younger, good-risk patients.
3. Diverticulitis may disguise cancer; in 25% of cases x-ray studies could not distinguish between the two.
4. Failures of palliative procedures lead to multiple surgical attempts, each carrying its own risk.

After the first response to medical treatment or colostomy, the patient with definite diverticulitis should be considered seriously for surgical operation. The patient should merely know what his physician realizes—that he will always have the disease; that ignoring the disease or mere palliative surgery may lead to prolonged infirmity in later, less vigorous years, when recuperative powers have waned.



Present Status of ACTH and Cortisone

An excellent and most timely assessment of the present position of ACTH and Cortisone is presented by the author in an objective and expert manner. Briefly, on the asset side there are two factors. In the first place he finds that an impressive number of individuals are alive and essentially well who, without ACTH and/or cortisone would almost certainly have long since died. These include patients with pemphigus, dermatomyositis and lupus erythematosus. Secondly, since the advent of ACTH and cortisone, many patients with chronic disabling diseases who had previously been completely unable to pursue a gainful occupation, have become self-supporting, contributing members of society; these include particularly patients with rheumatoid arthritis.

On the debit side are the "side-

effects," e.g., the development of one or more of the features of Cushing's syndrome, and the occasional occurrence of psychoses and perforation of a peptic ulcer. The author believes, however, that many of these untoward effects can be avoided by "anti - ACTH - cortisone measures" such as diets high in protein (especially nucleoprotein) and potassium, low in sodium and carbohydrate, adequate in calories and essential vitamins, as well as the use of anabolic steroids such as testosterone and estrogens. He sums up the position as follows: "If one surveys the subject soberly, it is apparent that, with the knowledge at present available, many of these hazards can be avoided; and that a vast amount of work remains to be performed in terms of clinical and laboratory evaluation."

L. W. Kinsell, *J. Clin. Endocrinol.*, 15:120, 1953.

Erythromycin Ointment in the Treatment of Pyogenic Dermatoses

A study of the uses of this new antibiotic in primary and secondary pyogenic skin infections

IRWIN I. LUBOWE, M.D., *New York, New York*

We have conducted clinical surveys on the treatment of the pyogenic dermatoses utilizing the newer antibiotics, and combinations of antibiotics, as bacitracin-tyrothricin,^{1,5,6,7} bacitracin-neomycin,² and bacitracin-neomycin-tyrothricin³ ointments. The efficiency of these agents has been demonstrated in their clearing up of a large percentage of cases of primary pyoderma and secondary impetiginized non-pyogenic dermatoses.

Polymyxin B sulfate⁴ has also been

supplied as an ointment, which has a broad spectrum bacteriicidal effect against the gram-negative bacilli, and is particularly effective against *Pseudomonas aeruginosa* (*B. pyocyaneus*).

More recently, we have been conducting a survey of the use of the new antibiotic erythromycin in a 1% petrolatum base for the treatment of the primary pyoderma of the skin and also secondary pyogenic infections superimposed on primary dermatitis.

Erythromycin, a crystalline substance formed during the growth of *streptomyces erythreus*, has been demonstrated to be effective orally against a wide variety of gram-positive organisms, and against certain

1. Lubowe, I. I., *N. Y. State J. of Med.* 51:5, 1951.
2. Lubowe, I. I., *Amer. Prac. & Digest Treat.* 4:9, 1953.
3. Unpublished clinical data.
4. Finnerty, E. F., Jr., *Medical Times*, August 1953.
5. Derravis, J. L., et al, *J.A.M.A.* 141:191, 1949.
6. Miller, J. L., et al, *J. Invest. Dermat.* 10:179, 1948.
7. Miller, J. L., et al, *Arch. Derm. & Syph.* 68:3, 1953.

RESULTS OF CLINICAL USE OF ERYTHROMYCIN OINTMENT

Disease	Number of Cases	Im-proved	Unim-proved	% Im-proved
Impetigo, Face	7	7	0	100
Ecthyma, Legs and Thighs	4	4	0	100
Varicose Ulcer, Leg				
Secondary Infection	6	4	2	66
Acne Pustulosa and Cystica	6	4	2	66
Folliculitis, Face and Scalp	10	8	2	80
Dermatitis Venenata, Occupational,				
Secondary Infection	6	5	1	83
Acrodermatitis Pustulosa Perstans	7	6	1	85
Paronychia	5	4	1	80
Folliculitis Hydradenitis				
Suppurativa	4	1	3	80
TOTAL	55	43	12	

gram-negative organisms.

No serious untoward reactions have been reported. It is particularly effective against staphylococci which have become resistant to other antibiotics, particularly penicillin, and against pneumococci.

We have found the application of erythromycin to be one of the best means of clearing the skin of infections. In our series of 55 cases, only 1 reaction to the medication occurred, that in a case of infected varicose ulcer. It was necessary to discontinue the use of the ointment because of the local irritation. Several patients complained of burning at the site of application if the ointment was covered by a dressing for 24 hours or longer.

We also used the ointment in 22 cases after the removal of verrucae, seborrheic keratoses, nevi, and sebaceous cysts. The operative sites, dressed with the ointment two or three times per week, healed rapidly, and there was no infection.

The ointment was found effective for the treatment of impetigo, ecthyma, folliculitis of the face and scalp, secondary infection of cases of dermatitis venenata, particularly of the occupational or household type, acrodermatitis pustulosa and vesicu-

losa perstans.

It was moderately effective in clearing superficial infection of varicose ulcer of the leg and acne pustulosa and cystica, least effective in the treatment of folliculitis hydradenitis suppurativa.

After two weeks, if the deeper infections did not react to the erythromycin ointment, adjuvant therapy was used, as mild antiseptic compresses, superficial x-ray therapy, and staphylococcus vaccine and toxoid.

CONCLUSIONS

1. The superficial pyoderma rapidly heal under the topical application of 1% erythromycin ointment.

2. Infections secondary to primary dermatoses yield to the erythromycin ointment.

3. The deeper primary pyogenic dermatosis, as folliculitis hydradenitis suppurativa, and acne pustulosa and cystica, respond poorly.

4. The epidermal sensitization is negligible in patients using the ointment during a period of 4 weeks. The sensitization factor increases with the longer time interval of application.

The Erythromycin Ointment was supplied by Dr. George H. Berryman, Abbott Laboratories, North Chicago.

CURRENT LITERATURE

The Prevention of Rheumatic Fever

*Advantages and disadvantages of
continuous and intermittent penicillin
prophylaxis in school children*

EARNEST CRAIGE, *Boston, Massachusetts*

The vast majority of attacks of rheumatic fever are preceded by streptococcal infections, such as tonsillitis, pharyngitis, and scarlet fever. It has been said that if one could prevent streptococcal infections, he might be able to prevent rheumatic fever. Sulfonamides were first employed for this purpose and have now had a trial over a 14-year period. They are effective, cheap, very little toxic, and can be taken by mouth. At present sulfadiazine is widely used as a continuous prophylactic agent, 0.5 Gm. daily for those weighing 60 pounds and 1.0 Gm. daily for those weighing more than 60 pounds. Its disadvantages include the occasional appearance of toxic reactions affecting the blood or kidneys. Frequent checks of white blood cells and urine are necessary, therefore, especially during the first

6 or 8 weeks of therapy. A more serious drawback of the sulfonamides is that they are bacteriostatic rather than bactericidal against the beta hemolytic streptococcus.

It was logical, therefore, to turn to penicillin which, even in small concentrations, is lethal to the streptococcus. Penicillin was found to be effective in eliminating streptococci from the throats of carriers, and patients with streptococcal infections who have been treated promptly with penicillin have a lessened incidence of rising antistreptolysin titer. These observations suggest that penicillin might be used (1) continuously to prevent the implantation of streptococci in the pharynx, or (2) intermittently for the treatment of acute streptococcal infections with the expectation of preventing the subsequent appearance

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may often be used successfully in patients in whom resistance or sensitivity to other forms of antibiotic therapy has developed

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250 mg., 100 mg., 50 mg.

TETRACYN INTRAVENOUS
Vials of 250 mg. and 500 mg.

TETRACYN ORAL SUSPENSION
(amphoteric) (chocolate flavored)
Bottles of 1.5 Gm.



*English, A. R., et al.:
Antibiotics Annual (1953-1954), New York,
Medical Encyclopedia, Inc., 1953, p. 70.

Lake Shore Drive, Chicago 11, Illinois

of rheumatic fever.

The first of these methods is particularly useful for the protection of one who has had an attack of rheumatic fever and is therefore peculiarly susceptible to the effects of a new streptococcal infection. The second method is occasionally useful in rheumatic subjects and has been found effective in the prevention of initial attacks of rheumatic fever.

When penicillin is used as a continuous prophylactic agent, the oral tablets, 200,000 or 250,000 units twice a day, are generally employed. It has been shown that the first five years after an attack of rheumatic fever, recurrences are particularly likely to appear in the unprotected patient. It is imperative to continue to give penicillin for at least this

long. In school children, continuous prophylaxis up to 18 years is desirable because of exposure to the streptococcus organism in the classroom. Mothers with rheumatic heart disease should resume prophylaxis during streptococcal infections among their children.

At present prices the yearly cost of penicillin prophylaxis is about \$100. Sensitivity reactions, such as urticaria are rare. Their hazard must be weighed against the advantages of the prophylactic program. Recent reports suggest the possibility that infrequent injections of long-acting penicillin every 4 weeks may supply blood levels adequate to repel the invasion of beta hemolytic streptococci; the oral tablets may be supplanted by periodic injections.

N. C. Med. J. 14:593, 1953.



Acute Myocardial Infarction During Summer Months

Considerable evidence has accumulated to show that in the northern parts of the United States there is a decreased frequency of acute myocardial infarction in the summer, and an increased frequency during the winter months. Various reasons have been suggested for the winter frequency, including the seasonal increase in respiratory infections, in body metabolism, and also the possible effect produced on vasomotor reflexes by cold weather. The position of the hot climates was studied in Dallas, Texas. During 1946-1951, 1,386 proven cases of acute myocardial infarction were admitted to the three hospitals in that city, and the monthly distribution of

these showed the highest frequency in July and August. For example, there were 152 cases in July and 100 in February. Divided according to seasons, there were 396 cases in the summer, compared with 319 in the winter. The importance of very hot weather as a precipitating or predisposing factor in acute myocardial infarction is duly evaluated. From this it appears probable that the profound physiologic adjustment that the patient must make to preserve a constant body temperature exerts a considerable strain on the organism and may act as an important precipitating factor of acute myocardial infarction.

H. E. Heyer, et al, Am. Heart J., 45: 741, 1953.

Every Doctor Should Know About Allergy

*Allergic conditions may be found
in any part of the body and may closely
mimic organic conditions*

J. H. BLACK, M.D., Dallas, Texas

In the early days asthma and hay fever were the most common allergic conditions. Today it may be seasonal conjunctivitis or mucous colitis; eczema or hydrarthrosis; asthma or an acute abdominal episode.

Allergy is less frequent than some enthusiasts claim and more common than is realized by many physicians. There is disagreement regarding the classification of some conditions as allergic, but when the elimination of questioned conditions has been made by conservative men there still remains 10% of the population who suffer from one or another allergic condition.

The mechanism of an allergic attack is an antigen-antibody reaction resulting probably in the release of histamine. The tissue reaction consists of vascular dilation, increased

capillary permeability with edema and cellular infiltration particularly of eosinophiles. If there are repeated reactions in the same site there may result fibrosis, fibrinoid degeneration of collagen and, usually, numbers of eosinophiles. The reactions may be modified by the tissue in which they develop, but basically they are the same.

It should be kept in mind that allergic conditions are common, that they may be found in any part of the body, and that they may closely mimic organic conditions, their recognition will not be difficult.

Conjunctivitis, keratitis or iritis not infrequently are due to sensitization. Some nasal blocking is due to a thyroid deficiency and not to an allergic reaction. Attacks of otitis media may result from recurring allergic rhinitis. Recurring deaf-

ness may be due to allergic edema as are many cases of recurring hoarseness, chronic, unproductive cough, and Meniere's syndrome.

Occasionally a patient is seen with cardiac disease and asthma, and it is important to recognize the presence of both. Emphysema is a frequent sequel of asthma but sometimes it appears unheralded by any previous disease.

Loeffler's syndrome occurs more often than is recognized. Gaseous distension is a frequent finding in allergic reactions, not only those in the GI tract but even in asthma. Acute, colicky pain may occur in urticaria, from swellings, which develop in the GI mucosa — relieved promptly by epinephrine.

Symptoms leading to the diagnosis of appendicitis or gallbladder disease may be caused by the eating of some certain food. Reports of the finding of edema and large numbers of eosinophiles in appendices removed at operation and no other notable findings, or recurrence of symptoms after removal of the organ, should lead one to suspect the attacks had been allergic.

Headaches with syncope may be on an allergic basis.

At least $\frac{2}{3}$ of clinical allergies de-

velop before the age of 20. True asthma or hay fever may develop in elderly people, but dyspnea coming on after middle life, in one who has had no previous manifestations of allergy, is far more likely to be the result of cardiac disease than of asthma.

There are those who suffer from some sensitivity for a while and then, without obvious explanation, lose it. The far greater number continue to suffer until something is done about it; not more than 10 or 15% recover spontaneously.

People may become sensitive to a food which has been a frequent part of their diet for many years. It is the patient not the food nor the environment which has changed. Changes in weather, a cold, emotional disturbance or undue fatigue may precipitate attacks. Most patients are only moderately or slightly sensitive to the antigen and, when other conditions are favorable, can tolerate the usual exposure without symptoms. Multiple sensitivity is the rule. But people do not become allergic to great numbers of foods. Patients are usually sensitive to a few things and proper attention to these produces satisfactory relief.

J. H. Black, III. *Med. Jour.* 105:5, 1954.

Hazards of the Aged

Of the 100,000 deaths from accidents in the United States annually, 25% occur among people 65 and over although they comprise only 8% of the total population. Three-fourths of all the fatal accidents among the elders were of two types: falls and motor vehicle injuries, motor vehicle most prevalent for men, falls for women. In each sex the majority of highway fatalities were among pedestrians.

Accidents are much more amenable to control than any of the other major causes of death among the aged. There is a responsibility here stated and laid at the physician's doorstep. He can impress upon the elderly their limitations and upon their families the importance of eliminating all possible hazards in the home.

Editorial, *New York State J. of Med.* 54: 337, 1954.

Measles Encephalomyelitis

*The sudden cessation or depression
of the typical measles cough is an often
overlooked diagnostic aid*

MAX J. FOX, M.D., JOSEPH F. KUZMA, M.D.,
J. D. STUHLER, M.D., *Marquette University
School of Medicine, Milwaukee, Wisconsin*

Although the usual signs and symptoms of measles encephalomyelitis are well known, one of its earliest which is valuable for diagnostic purposes has heretofore not received adequate attention; the reference is to the sudden cessation or depression of the typical measles cough, noted in 74 per cent of the authors patients.

The cough reflex depends upon stimuli from the respiratory epithelium passing along the afferent fibers of the vagus nerve through the nucleus of the tractus solitarius and thence along descending fibers to the spinal primary motor neurons and final discharge to the diaphragm, the intercostal and abdominal muscles, and the glottis. In

measles encephalomyelitis involvement of the tractus solitarius will break this reflex arc with sudden cessation of coughing. In view of the observations of the authors, this sign during the active phase of rubeola should warn the observer of an impending encephalomyelitis when reinforced with other confirmatory signs of cerebral or spinal involvement.

No medication containing codeine should ever be given to depress the cough of rubeola, because of the danger of codeine intoxication. Two such instances were observed within the past two years. Both patients had been admitted to the hospital because of a supposed measles encephalomyelitis exhibiting convul-

sions, lethargy, vomiting, nuchal rigidity, cyanosis and fever. In each instance the spinal fluid findings were normal, and the patient recovered completely within 24 hours after oxygen and helium therapy was instituted. Anoxia following the prolonged administration of codeine may well have been a factor.

Treatment of this condition remains largely symptomatic. General anesthesia, barbiturates, magnesium sulfate, and hypertonic dextrose solutions all have been used in an attempt to reduce cerebral edema and control convulsions. Convalescent

serum has been of questionable value. Of the 77 cases covered by this report, over one-fourth ended fatally. Coma or convulsions occurred in 68 per cent of the fatal cases. The onset of the disease occurred some 3 to 4 days after the appearance of the morbilliform rash in 46 per cent of the patients. Sixty-two per cent of the victims were within the age range of 4 to 7 years. As noted previously, a diminished or absent cough reflex was one of the earliest signs noted in 74 per cent of the patients.

Am. J. Dis. Child., 85:444, 1953.



Effect of Anticholinergic Drugs Upon Gastric Secretion

In this comprehensive study, which is reported from the Billings Medical clinic, The University of Chicago, 5 anticholinergic substances were compared for their activity in depressing gastric secretory activity in man; they were: banthine, prantal, and 3 new compound designated U.0407, U.0385 and U.0229. In 359 tests of basal gastric secretion, 215 in patients with peptic ulcer and 144 in normal volunteers, during which mydriasis, heart rate, and blood pressure were also investigated, particular attention was given to the influence of route of administration, dosage and toxicity of the drugs.

Considerable reduction in output of acid resulted after *intramuscular* injection of the 5 compounds. Absence of free acid for at least 30 minutes occurred after a latent period of 15 minutes after injection of 1.2 to 2.0 mg of U.0229, 1.6 to 2.0 mg. of U.0385, or 15 to 20 mg. of banthine. Effective doses of U.0229

and U.0385 had a more prolonged action than banthine. The decreasing order of potency was found to be: U.0229, U.0385, banthine, U.0407, and prantal.

Oral administration was much less effective and, except with U.0229, much larger doses were required to produce any action at all. For example, *banthine by mouth* in doses sufficient to produce side effects *never produced anacidity*.

It is concluded that these drugs vary greatly in their effects on gastric secretion and in producing side effects, and that they are generally much less effective by mouth, although U.0229 and U.0385 did depress gastric acidity by this route. But these two most effective drugs also produced the greatest number of side effects. It was also found that there is a great variation in individual response, both in terms of secretory inhibition and incidence of side effects. Further study would appear to be indicated.

J. B. Kirsner, et al, *Gastroenterol*, 23:199, 1953.

Complete Inversion of the Bladder Through a Vesico-Vaginal Fistula

*A series of nylon stitches,
inserted mattress fashion, was
performed on the patient*

J. C. MOIR, M.D., London, England

A woman who, for 27 years, had had complete incontinence of urine, dated from a difficult forceps delivery, had an operation for the treatment of urinary leakage, but without benefit. She had resigned herself to a life of continual wetness.

In spite of her disability this woman had had two further pregnancies. During the second of these she became aware that there was "something falling down"; this "something" was diagnosed by the district nurse who confined her as prolapse of the womb. In recent years the prolapse became more and more troublesome, and eventually drove her to seek further advice in a nearby medical centre. There it was found that the prolapse was no fall-

ing of the womb but a protrusion of the bladder itself—a turning inside-out of the bladder—through a large vesico-vaginal fistula.

A fleshy mass was seen at the vulva, as large as a fist, and at first sight had every appearance of a complete uterine procidentia. Closer examination showed that the mass was an inverted bladder. The uterus and cervix were in normal position. By manipulations the mass could be replaced—although only temporarily — through a fistulous opening, 1 in. in diameter, and situated above the level of the urethra in the trigone. Both ureteric orifices could be identified just within the margins of the fistula where they could be seen indulging in a periodic

urinary cascade.

The whole prolapsed mass appeared to be covered with squamous epithelium, confirmed by biopsy and histological examination.

Operative repair was surprisingly simple, and was accomplished by the vaginal route. The chief step in the repair was a series of nylon stitches inserted mattress fashion to approximate the vaginal edges. These edges had been prepared by a broad, slanting cut towards the bladder mucosa, together with a very slight under-

cut of the vaginal margins. The bladder was drained by continuous gentle suction through a urethral catheter for 14 days. The sutures were removed on the 21st day.

The bladder function was quickly restored to normal, and the patient left hospital in excellent condition on the 38th day. A cystoscopic examination before discharge showed a healthy-looking bladder wall, without any evidence of cystitis.

Proc. Royal Soc. of Med. 46:844, 1953.



Complication of Antibiotic Therapy: Its Response to Erythromycin

Cultures were made from freshly passed stools of 40 patients, admitted to the Mayo Clinic for some illness or surgical procedure; all had been treated with either aureomycin or terramycin.

Analysis of these cases showed that resistant strains of *Staphylococcus pyogenes* may emerge as a result of the administration of these two antibiotics. Gastrointestinal and systemic reactions may occur when large numbers of staphylococci appear in the intestinal tract and when the usual intestinal flora are either absent or considerably reduced in number. If a patient harbors staphylococci in the upper part of the respiratory tract, it is possible that antibiotic therapy may permit transference of the organisms to the intestinal tract. The adverse reactions are apparently due to toxins.

The reactions may be severe, especially in a patient who has recently undergone a major operation or in one suffering from a severe illness such as pneumonia or peritonitis. The most frequent symptom is diarrhea. Other manifestation include pyrexia, shock, anorexia, nausea and vomiting, and abdominal distension. It was found that these manifestations may be alleviated by omitting terramycin or aureomycin therapy and administering erythromycin by mouth in doses of 300 to 400 mg, four times daily. Erythromycin was found to remove resistant strains of staphylococci from the intestinal tract, but it is pointed out that the compound need not be administered if comparatively few staphylococci are present in the stools.

W. H. Dearing, F. R. Heilman. *Proc. Staff Meet., Mayo Clin.*, 28:121, 1953.

AIDS IN DIAGNOSIS

Glycosuria and Hyperglycemia

Blood collected for analysis of its sugar content must be preserved with one drop of formalin or by the addition of potassium fluoride. It is best, however, to obtain prepared tubes from a local laboratory.

Most of the methods for determination of blood sugar are not entirely specific and the values are usually 15-25 mg. per 100 ml. higher than the true amounts. It is important to remember that the content in venous blood is less than that in capillary blood. The difference is not great during fasting, but after a carbohydrate meal it may amount to as much as 20-70 mg. per 100 ml.

G. H. Gray, *British Med. J.*, No. 4850: 1367, 1953.

Emotional Stress in the Precipitation of Congestive Heart Failure

Twenty-five patients, admitted consecutively to the Cincinnati General Hospital, were studied with a view to determining the relation between stress and the onset of congestive heart failure. The technique of associative anamnesis was employed and was supplemented where necessary by direct questioning. Precipitating factors could be identified in 23 of the 25 patients. In 19 it was felt that emotional tension was the factor immediately responsible for increasing the work load of the heart beyond its capacity; in 4 patients organic factors such as pul-

monary infarction were held to be responsible; in the other 2 it was impossible to isolate a single precipitating factor. Emotional tension at the material times can be grouped under two headings: (1) events leading to feelings of rejection and loss of security; and (2) events leading to feelings of frustration and rage. A situation to which the patient reacted strongly proved very often to be the precipitating factor.

W. N. Chambers, M. F. Reiser, *Psychosomatic Med.*, 15:38, 1953.

Spontaneous Rupture of the Normal Esophagus

There are few surgical emergencies in which early diagnosis and prompt treatment are so necessary to save life.

The clinical picture of sudden rupture of the esophagus caused by vomiting is one of rigidity and tenderness of the upper abdomen, difficulty in breathing, subcutaneous emphysema and shock. The diagnosis should be considered when there is uncertainty whether the pathologic process is above or below the diaphragm in patients presenting acute upper abdominal pain. Once suspected, the diagnosis can be confirmed by the finding of mediastinal emphysema on a chest film, gastric fluid on thoracentesis or an opening in the esophagus after a barium swallow.

Delay is fatal. Prompt resuscitative measures followed by thoraco-

tomy under endotracheal anesthesia, with primary suture of the esophageal tear, is the procedure of choice.

Two cases in elderly patients are reported. In 1 case primary suture was performed 24 h. after the rupture, and the patient survived for 8 days. Death was due to mediastinitis and dissolution of the esophageal suture line. In the other case primary suture was performed 6 hours after rupture, and the patient recovered rapidly; later, he was found to have an inoperable carcinoma of the stomach.

R. E. Alt, et al., *New England Jour. of Med.* 249: 1060, Dec. 24, 1953.

Finding the Cause of Obscure Fever

A definite diagnosis is made in only about half of the cases of obscure fever, even after repeated examinations and careful laboratory tests. When physical, x-ray, immunologic and bacteriologic examinations are negative, it is advisable to carry out therapeutic tests.

Perinephric and subdiaphragmatic abscess, and occasionally osteomyelitis may not have any local manifestations, and paranasal sinusitis may exhibit fever as its only symptom. Careful physical and x-ray examinations may serve to rule these entities in or out of the differential diagnosis.

Subacute bacterial endocarditis may be dismissed from consideration if a heart murmur is not present.

Extrapulmonary tuberculosis is usually considered first in an obscure fever. The simple procedure of using P.P.D. or O.T. will serve in almost all instances to rule out this diagnosis, if the test is negative; but it does not prove active disease if positive. Brucellosis has been over-emphasized as a cause of obscure fever.

Chronic meningococcal septicemia probably occurs more often than is

realized and should be suspected when there are fever, leukocytosis, joint pains and erythematous eruption of the extremities.

Rheumatic fever may be manifested without the findings of joint pain. The diagnosis may be made by the presence of a heart murmur, prolongation of P-R interval, and/or response to salicylate therapy.

Neoplasm may cause various types of fever curves. Hypernephroma may manifest itself by fever without other symptoms and should be suspected in obscure fever.

The use of therapeutic tests in obscure fever may be the only method by which a diagnosis may be made. The present use of the sulfonamides and antibiotics when a source of fever is not determined is neither to be condemned nor condoned. Despite the lack of definite diagnosis in these cases, many lives have been saved by this procedure. Indiscriminate use of these drugs often masks the underlying disease, delaying adequate therapy, and increasing bacterial resistance against the agent used. Other therapeutic tests are the use of salicylates for rheumatic fever, quinine and the more recently developed primaquine, chloroquine, etc., in suspected malaria, emetine for amebiasis, and roentgen radiation in suspected Hodgkin's disease.

Many of the answers to fever of undetermined origin may be uncovered with the isolation and study of various viruses. Some of the cases reported today may be due to abortive poliomyelitis or to other diseases whose course has been aborted before diagnostic clinical features have developed. Although great strides have been made to clarify the picture of "fever of undetermined origin," this "entity" will continue to be written as the final diagnosis on hospital charts.

C. T. Isaacs, *Med. An. D. C.* 22: 595, 1953.

THERAPEUTIC TRENDS

Advances in the Treatment of Gout

Colchicine is given in doses of 0.6 mg. (1/100 grain) every hour, until acute pain subsides, or until nausea or diarrhea occurs. Relief is usually obtained within 24 to 36 hours; then 0.6 mg. t.i.d. until all but minimal distress is controlled. Salicylates may then be added or substituted for the colchicine, with addition of small doses of barbiturates.

A non-toxic dose of colchicine must be determined for each patient. The relief obtained from colchicine is also a diagnostic test.

The treatment of all stages of gout with Benemid is by far the most important; 0.25 gram twice daily for one week, tolerance being noted. Then this is followed by doses of 0.5 gram twice daily. If no toxic effects, this dose may be continued indefinitely, or until complete recovery. Sodium bicarbonate with each dose of Benemid alkalizes the urine and prevents urate deposits in the urinary tract.

Benemid is not an analgesic. Frequently gouty patients have residual distress and mild temporary aggravations of pain which require an analgesic. Salicylates and Benemid seem to oppose each other. The continued use of colchicine for a short time until the distress is relieved does not impede the effectiveness of Benemid when they are used together.

For the past few years I have not employed the dietary restrictions recommended for gout, but for obesity, diabetes, liver dyscrasias, etc. of the gouty patient.

Warner, P. J., *Jour. Med. Soc. New Jersey*, 50: 328, 1953.

Congestive Heart Failure

The use of quinidine to convert auricular fibrillation to normal sinus rhythm has received a good deal of attention in the past few years. Although treatment directed toward the relief of concomitant congestive heart failure generally preceded the administration of quinidine, a substantial number of patients developed one or more manifestations of quinidine toxicity. In a group of six patients recently reported who developed ventricular tachycardia following the use of quinidine, four had recently or incompletely recovered from congestive failure. It therefore seemed important to determine whether the levels of quinidine achieved in the blood after oral administration of quinidine sulfate in patients with congestive heart failure differed from those occurring in normal individuals.

In general, the patients with congestive failure showed higher serum levels at the end of 12 hours than did the control subjects, although the time of appearance in the blood stream and the peak level did not differ significantly from the latter.

This suggests that the rate of disappearance was slower in the patients with the heart failure.

The recognition that patients with failure will show considerable delay in lowering of the blood quinidine level is of great importance in the continued administration of this drug. Unusually high serum levels and serious toxicity can occur in these patients. If this hazard is to be avoided, patients with failure should be given quinidine with caution and continued administration should be controlled by serum quinidine determinations.

M. G. Brown, D. Holzman, E. W. Creelman, *Am. J. Med. Sci.*, 225:129-131, 1953.

Dentoalveolar Abscess

The multiple antibiotic and fungicidal preparation described by Bender and Seltzer (*J. Am. Dent. Assn.*, 45:293, 1952) proved highly effective in control and treatment of pulpless teeth and infectious processes. The preparation is made up of streptomycin, chloramphenicol and sodium caprylate. These antibiotics are well triturated in a sterile mortar for 10 to 15 minutes and to this is added procaine penicillin G. The preparation is dispensed from a sterile bottle which has a Luer-Lok syringe attached to its neck.

No undesirable side reactions were observed in all except one of the 9 patients successfully treated for the control of infectious processes incidental to treatment of pulpless teeth. A wider study and application of this multiple antibiotic is warmly recommended.

P. A. Krooks, *U. S. Armed Forces Med. J.*, 4:705-709, 1955.

Chloramphenicol Treatment of the Newborn

A hemolytic streptococcus sensitive to 1 ug of chloramphenicol per milliliter (ml.) was used to assay blood-serum concentration in 47

newborn babies. Dosage irrespective of weight proved unsatisfactory in 17. A scheme of dosage based on body weight was applied to 30 babies, 24 of whom showed satisfactory blood levels for at least 12 hours and detectable levels for 24. No chloramphenicol was detected in the blood serum in 6 babies, one of whom had vomited half an hour after its dose. No cause for the remaining 5 negative results was discovered. Failure of absorption was discounted, for one of these babies showed a reasonable serum level in a repeat test the following day. The authors recommend a dosage of 30 to 50 mg/lb. of body weight (73 to 110 mg/kg) per dose, given twice daily.

R. M. Calman, J. Murray, *Brit. Med. J.*, 1:759, 1953.

A Treatment for Inverted Nipples

For the last 2 years a simple procedure has been carried out that has proved to be quite rewarding. Place the thumbs, or the forefingers, close to the inverted nipple, then press into the breast tissue quite firmly and gradually push the fingers away from the areola. An imaginary cross is drawn on the breast, that is, a vertical line and a horizontal line, and the patient is instructed to put her 2 thumbs close to the nipple, press in firmly against the breast tissue, and then pull the thumb or finger laterally in the horizontal position or upward and downward in the vertical position. If she does this 4 or 5 times when she awakens in the morning the nipple will assume an erect and projected position. Then it is easier to grasp as a whole unit and, by grasping it at its base, she can gently tease it out a bit further. The patient is instructed to begin these exercises at the 5th or 6th month of pregnancy.

J. B. Hoffman, *Amer. J. Obs. & Gynec.*, 8:1953.

NEW PHARMACEUTICAL PRODUCTS

Maxitate with Rauwolfia Compound Brown Tablets

(Strassenburgh)

Each tablet contains Maxitate 30 mg., Rutin 30 mg., Rauwolfia (whole root) 30 mg. *Indications:* moderately to mildly severe labile hypertension. *Dosage:* Usual starting 2 tablets 3 times daily. *Supplied:* bottles of 100 tablets.

Hydrocortone Trimethylacetate

(Ciba)

Hydrocortisone acetate trimethylacetate, 25 mg./ml., as an aqueous suspension for intramuscular use only. *Indications:* chronic primary and secondary adrenocortical insufficiency; hypertension. *Dosage:* Average depot dose, 60 to 90 mg. every weeks. *Supplied:* vials of 4 ml.

Vitamin B₁₂ Tablets

(Smith, Kline & French)

Each tablet contains 25 mg. of vitamin B₁₂ plus 10 mg. of crystalline vitamin B₁. *Indications:* treating the chronically ill or undernourished patient, supplementing nutrition in chronic diarrhea and celiac disease. *Dosage:* As directed by physician. *Supplied:* bottles of 50 tablets.

Donamine Tablets

(Pfizer)

Brand of parachloramine hydrochloride. *Indications:* motion sickness. *Dosage:* Two tablets provide protection for a full 24 hours in most adults. *Supplied:* bottles of 100 tablets.

Diamox Tablets

(Lederle)

Diamox acetazoleamide in 250 mg. tablets. *Indications:* treatment of edema due to congestive heart failure. *Dosage:* For diuresis: 1 or 1½ tablets depending on weight, taken orally in the morning daily or once in 2 days. *Supplied:* bottles of 25 and 100 tablets.

Corcidin Pediatric Medilets

(Schering)

Each Medilet contains Chlor-Trimeton maleate, 0.75 mg.; aspirin 80 mg.; and acetophenetidin, 16 mg. *Indications:* relief of nasal symptoms of colds and aches and pains accompanying a cold. *Dosage:* Children under 6 years, ¼ to 1 Medilet, or as directed by physician; 6 to 12 years, 1 to 2 Medilets. Each dose may be repeated every 3 to 4 hours. *Supplied:* bottles of 100 Medilets.

Glycine Solution

(Abbott)

Concentrated sterile solution of glycocoll (aminoacetic acid, N.F.) *Indications:* after dilution as a urological irrigation fluid. *Dosage:* As directed by physician. *Supplied:* 1,000 cc. containers, singly and in cases of 6.

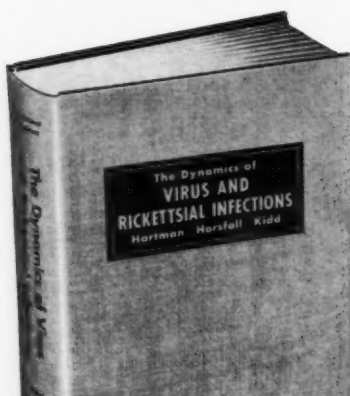
Semets Troches

(Massengill)

Germicidal-antiseptic preparation containing tyrothricin, hyamine and benzocaine. *Indications:* throat irritations associated with coughs, colds, tonsillitis and pharyngitis. *Dosage:* One troche as required. *Supplied:* boxes of 12 and 500 troches.

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A depletion of sodium in the diet is of benefit in essential hypertension. The sodium intake has not been sufficiently reduced in the past. Such patients do better if the sodium radical is about 200 mgms. per day.

Bryant et al have devised a simple urinary test which informs patients whether in the preceding 24 h. they have taken more than 200 mg. of sodium. This is a good, simple, clinical test to guide the patient, as a Clinitest tablet test guides the diabetic.

G. G. Ornstein, et al. *Jour. Med. Soc. New Jersey*, 56: 294, 1953.

Spinal Nerve Root Pain

Protamide is a non-narcotic drug, which has given remarkable relief to patients suffering with nerve root pain, usual dose 1.3 c.c. IM.

Illustrative case: a woman, 67, has had moderate arthritis, especially of the knees and ankles, for many years; sudden, severe pain in the l. knee, was felt after tripping on the stairs, down the anterior tibial region to the ankle, tenderness to pressure over the lower tibia. One injection of 1.3 c.c. of Protamide was followed by 3 more at weekly intervals, and the severe pain has entirely subsided. Patient has remained fairly comfortable.

12 cases of nerve root pain due to various causes are reported. Protamide was given to each one, with complete relief of pain in five cases. In five others, all arthritics, pain has been so relieved that treatment is unnecessary at present. The two cases with cancer are convinced that Protamide reduces the pain so much that each requests periodic injections.

There have been no unpleasant side effects from the injections of Protamide.

T. R. Love, *Rocky Mountain Med. Jour.* 50: 873, 1953.

April, 1954

335



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The Tourniquet

The tourniquet remains a valuable tool. To obstruct venous return and permit some arterial blood to go through will result in the sequestration of a major portion of the patient's blood distal to the tourniquet with rapid deterioration in his general condition. A tourniquet should never be applied below the knee or elbow as it will not be effective, as the main artery to the leg and to the forearm runs between 2 bones, where it can not be compressed.

Once the need for a tourniquet has been established and it has been applied, it seldom if ever should be removed until blood replacement has been started and the patient is on the table in the operating room.

The old concept that a tourniquet should be released for 5 min. every half hour or even every hour is no longer tenable. The objective of the temporary release of the tourniquet was the prevention of gangrene, but the practice, as was demonstrated during World War II, is as unwise as it is unnecessary. Possibly an occasional limb may be lost because gangrene develops after a tourniquet has been left in place too long but it is even more certain that some lives may be lost because removal of a tourniquet at regular intervals permits the repeated loss of such quantities of blood as may prove fatal.

O. P. Hampton, Jr., *Southern Med. J.*, 47: 111, 1954.

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Scrub typhus, the disease that killed hundreds of Allied and Japanese troops in the Burma campaign during World War II, hasn't claimed a single soldier now on active service against Malaya's Communist terrorists.

A military information officer on non-tactical subjects attached to headquarters Malaya in Kuala Lumpur, said the reason is "the wonder antibiotic Chloromycetin, which has proved 100% effective in curing it. So swift is the cure that soldiers generally can be back on duty within a week. By older methods of treatment, they were away 6 to 6 months, and very often one in died."

Indiana State Med. Asso. 47: 38, 1954.

Evaluation of a Sedative Antispasmodic Preparation

In industrial practice and in private general practice there exists a wide field of clinical usefulness for sedative antispasmodic preparations.

Donnatal (R), a combination of natural belladonna alkaloids with phenobarbital, has been found particularly effective for the relief of pain associated with smooth muscle spasm of the GI tract. More than 85% of patients with epigastric pain and discomfort were rapidly and completely relieved of symptoms. There was no evidence of undesirable side reactions.

The uniformity of composition of Donnatal (R), the convenience of dosage regulation, product stability, and economy are factors of considerable importance in the evaluation of therapeutic agents of this category.

W. W. Barden, et als., JI. Maine Med. Asso. 45: 11, 1954.

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Resuscitation of the Newborn Infant

Fifty per cent of resuscitations have to be made on the premature infant; 5 to 7% of all deliveries are of premature infants. The methods of resuscitation effective in the adult are likely to fail in the newborn. The urgent indication is to introduce oxygen into the circulating blood. One hundred asphyxiated newborn infants were oxygenated in the Air Lock. The majority of term infants remained in the Air Lock for one to two hours; premature infants for longer periods.

The mortality rate of the *term infants* delivered in this hospital during 1952, the third year the Air Lock was in use, fell from 63 per 10,000 in 1949, to 37 per 10,000 in 1952, a reduction of 41%. The mortality rate of the *premature infants* delivered in this hospital during 1952, the third year the Air Lock was in use, fell from 2228 per 10,000 to 1504 per 10,000, a reduction of 32.5%.

The small premature infant (up to 1001 grams) has been but little helped by the Air Lock.

The initial absorption of oxygen through the skin and upper respiratory tract is most important. Increasing the pressure of oxygen available for this method of absorption is a vital step in resuscitation through oxygenation.

The expansion of gases expels fluids and secretions from the respiratory tract. This is the only theoretical way in which fluids can be efficiently expelled from the terminal bronchioles and alveolar sacs.

The use of the tracheal catheter in the newborn premature infant carries a high rate of mortality and its use should be discontinued.

Blossom, Allan. *Jour. Okla. State Med. Asso.* 40: 237, 1953.

FREE LITERATURE SERVICE

Arrangements have been made to forward you the most recent literature available on the conditions listed below. Please indicate on the yellow self-mailer the information you desire by circling the appropriate number.

Allergies

allergic reactions¹, asthma², asthma (bronchial)³, drug sensitivities⁴, eczema⁵, food⁶, hay fever⁷, urticaria⁸.

Blood, Cardiovascular

anemia⁹, anemia (pernicious)¹⁰, anticoagulant¹¹, arteriosclerotic peripheral vascular disease¹², angina pectoris¹³, Buerger's disease¹⁴, cardiovascular disorders¹⁵, congestive heart failure¹⁶, cardiac asthma¹⁷, coronary artery¹⁸, coronary thrombosis¹⁹, chronic trench-foot²⁰, dietetic restriction²¹, hypertension²², myocardial failure²³, myocardial insufficiency²⁴, peripheral neuritis²⁵, Raynaud's disease²⁶, thromboangiitis obliterans²⁷, varicose vein²⁸.

Dermatology

acne²⁹, athlete's foot³⁰, bacterial dermatologic condition³¹, bed sores³², burns³³, dermatoses³⁴, eczema³⁵, external ulcers³⁶, fungus diseases³⁷, infections³⁸, ivy dermatitis³⁹, pruritus⁴⁰, topical infections⁴¹, yaws⁴².

Endocrinology

adrenal gland⁴³, cretinism⁴⁴, diabetes⁴⁵, exophthalmic goiter⁴⁶, Graves' disease⁴⁷, hyperthyroidism⁴⁸, myxedema⁴⁹, pituitary gland⁵⁰, thyroid gland⁵¹, thyrotoxicosis⁵².

Eye, Ear, Respiratory

bronchitis⁵³, choroiditis⁵⁴, coughing⁵⁵, eye infections⁵⁶, ear infections⁵⁷, iritis⁵⁸, keratitis⁵⁹, laryngitis⁶⁰, nasal congestion⁶¹, night blindness⁶², otologic dermatosis⁶³, pharyngitis⁶⁴, respiratory infections⁶⁵, sympathetic ophthalmia⁶⁶, sinusitis⁶⁷, tonsillitis⁶⁸, uveitis⁶⁹, vasomotor rhinitis⁷⁰.

Gastrointestinal, Liver and Spleen

amebiasis⁷¹, colitis⁷², constipation (chronic)⁷³, cirrhosis of liver⁷⁴, constipation⁷⁵, diarrhea⁷⁶, gallbladder and bile ducts⁷⁷, gastrointestinal spasm (functional)⁷⁸, gastroduodenal bleeding⁷⁹, peptic ulcer⁸⁰, staphylococci⁸¹, streptococci⁸².

Genito-Urinary

bladder diseases⁸³, cystitis⁸⁴, kidney diseases⁸⁵, prostate gland⁸⁶, pyelitis⁸⁷, ureter diseases⁸⁸, urinary tract infections⁸⁹, urethra diseases⁹⁰.

Geriatrics

anemia⁹¹, arteriosclerosis⁹², cardiac edema⁹³, chronic fatigue⁹⁴, climacteric

(male) ⁹⁵, constipation ⁹⁶, insomnia ⁹⁷, low blood sugar level ⁹⁸, protein deficiency ⁹⁹, senility (male) ¹⁰⁰, senility (female) ¹⁰¹, vitamin deficiencies ¹⁰².

Gynecology and Obstetrics

amenorrhea ¹⁰³, cervicitis ¹⁰⁴, climacteric (female) ¹⁰⁵, conception control ¹⁰⁶, dysmenorrhea ¹⁰⁷, vaginitis ¹⁰⁸, habitual abortion ¹⁰⁹, leukoplakia (vulvar) ¹¹⁰, leukorrhea ¹¹¹, menopause ¹¹², menometrorrhagia ¹¹³, pregnancy tests ¹¹⁴, premenstrual disorders ¹¹⁵, postpartum bleeding ¹¹⁶, pregnancy (nausea & vomiting) ¹¹⁷.

Infectious Diseases

brucellosis ¹¹⁸, pneumonia ¹¹⁹, Rocky Mountain spotted fever ¹²⁰, tuberculosis ¹²¹.

Neuromuscular

analgesic ¹²², joint and muscle pain ¹²³, muscle dysfunction ¹²⁴, muscle spasm ¹²⁵, multiple sclerosis ¹²⁶, neuralgia ischiatica ¹²⁷, neuritis, diabetic ¹²⁸, osseous and neuromuscular disturbances ¹²⁹, Parkinsonism ¹³⁰.

Nutrition

anemia ¹³¹, avitaminoses ¹³², impaired fat metabolism ¹³³, malnutrition ¹³⁴, mineral deficiencies ¹³⁵, obesity ¹³⁶, multiple vitamin deficiencies ¹³⁷, pellagra ¹³⁸, protein deficiency ¹³⁹, vitamin deficiencies ¹⁴⁰, multiple deficiencies ¹⁴¹.

Pediatrics

bowel habits ¹⁴², diarrhea ¹⁴³, diaper dermatitis ¹⁴⁴, ear infections ¹⁴⁵, formula ¹⁴⁶, infantile eczema, nutritional needs ¹⁴⁷, scurvy ¹⁴⁸.

Rheumatic and Arthritic Diseases

arthritis ¹⁴⁹, bursitis ¹⁵⁰, gout ¹⁵¹, gouty arthritis ¹⁵², musculoskeletal pain ¹⁵³, rheumatic disease ¹⁵⁴, rheumatoid fever ¹⁵⁵, rheumatoid arthritis ¹⁵⁶.

Miscellaneous

alcoholism ¹⁵⁷, barbiturate poisoning ¹⁵⁸, debridement of necrotic tissue ¹⁵⁹, edema ¹⁶⁰, edema (salt retention) ¹⁶¹, industrial dermatoses ¹⁶², meningitis ¹⁶³, insomnia ¹⁶⁴, nervous tension ¹⁶⁵, psychoses ¹⁶⁶.

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Elastic stockings routinely applied to hospital patients over 20 years of age reduced by half the expected incidence of fatal pulmonary embolism in a series of 5467 medical, surgical and obstetric patients.

Every type of hospital patient may safely wear elastic stockings except those with severe local disease in the legs, such as ischemia, inflammation or trauma.

Elastic stockings are not a substitute for but an addition to measures designed to prevent pulmonary embolism, such as anticoagulants and venous ligation. They apparently prevent venous thrombosis in the calves and, through this effect, reduce the incidence of embolism.

The results of the method warrant its consideration as a routine hospital procedure.

R. W. Wilkins, J. R. Stanton, *New England Jour. of Med.*, 248: 108, 1953.

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